JULY, 1942

Rock Products

THE INDUSTRY'S RECOGNIZED AUTHORITY

How to operate under allocation order and P-56 . . . Lehigh returns to dry process . . . Drilling on a 45-deg. slope . . . Speeding up storage and shipping . . . New opportunities for lime

ROTARY KILNS

Machinery for Cement-Lime-Ore

In addition to a complete line of Rotary Kilns and Grinding Mills, F. L. Smidth & Co. also manufacture Coolers, Pre-Coolers, Pre-Heaters, Recuperators, Air Separators, Agitators, Packers, Extractors, Feeders, Burners, etc. and their auxiliary equipment, for the manufacture of Cement, Lime, Ores, and Allied Products.

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F. L. SMIDTH & CO.

60 EAST 42ND STREET — CEMENT ENGINEERING CEMENT MACHINERY — NEW YORK, N. Y.

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"STEP UP PRODUCTION" is the thought of every patriotic American today—so

CRUSH IT IN ONE OPERATION

Open view of the Williams "Slugger" Crusher showing heavy duty hammers, liners and discs.

Use One Williams Hammer Crusher to do the Entire Job.....Thoroughly.....At Low Cost

SPEED plus satisfactory work is essential in America today. Along these lines the Williams "Slugger" Crusher and Pulverizer now makes it possible to crush large pieces of stone weighing from 75 to 100 pounds to 1¼", ¾" or agricultural limestone in One Operation. This not only eliminates costly sledging but also does away with the unnecessary expense of a primary crusher.

The "Slugger" represents the most advanced type of crushing equipment on the market today and with seven sizes to choose from producing from 4 to 30 tons per hour, every producer whether large or small can now afford to install a Williams.

The Williams Patent Crusher & Pulverizer Company
800 ST. LOUIS AVE. ST. LOUIS, MISSOURI

Williams Fine Grinding Equipment With Air Separation . . .

For faster, more efficient fine grinding of limestone, lime, coal, talc, etc., there is a Williams Roller Mill with Air Separator to fit your requirements. Finenesses from 100 to 400 mesh.

Williams also builds Impact Mills with Air Separation; Mechanical Air Separators for classifying finely ground material or taking the fines out of dry material.

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Williams

OLDEST AND LARGEST BUILDERS OF HAMMERMILLS IN THE WORLD

PATENT CRUSHERS GRINDERS SHREDDERS

JUL -9 1942

20918
448

Two Easton TR-13H trailers hauled in train. Hydraulic side-dump Phoenix bodies. Designed for a cement plant quarry. Overall capacity, 40-45 tons.

LOOK AT IT THIS WAY...

Your haulage problem *is* different! When you plan to install a modern haulage system you must be ready to employ unprecedented ideas in design, construction or operation. Most likely some of these ideas will be your own, developed through long association with your own special operating problems. Easton engineering helps you to put your ideas to work. Your help from Easton is based on over twenty-five progressive years of experience with track and trackless equipment for moving earth, rock and ore. To help you achieve your desired capacity at lowest cost per ton Easton engineers are at your service. For free counsel call or write to Easton Car & Construction Company, Easton, Pa.

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Industrial Cars • Trailers • Electric Lift Trucks

Rock Products

Recognized the World Over as the Leader in Its Field

With which have been consolidated the journals *Cement and Engineering News* (founded 1896) and *Concrete Products* (established 1918)

VOL. 45, No. 7, JULY, 1942

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Impartial measurement of reader interest in terms of paid circulation.

★

Authentic facts relating to editorial scope and readership analysis.

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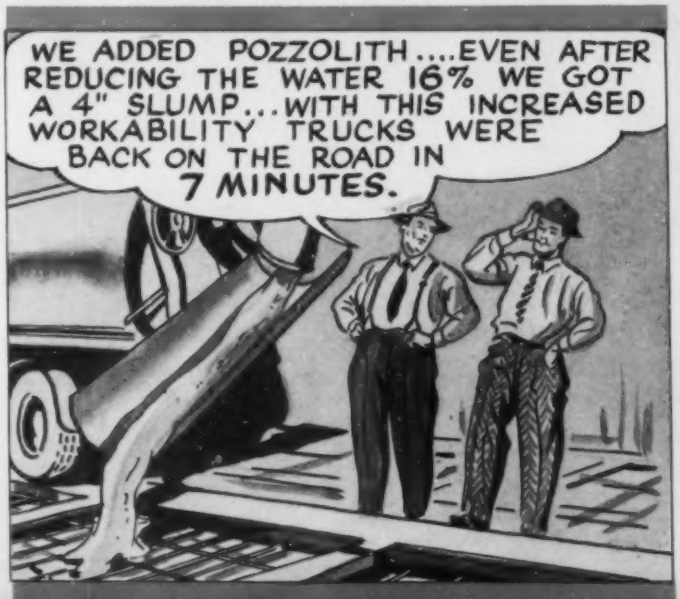
We saved $8.00 per day per truck by using *Pozzolith* in our Transit Mix*.....

*Actual Experience of Large Detroit Transit-Mix Company. Name on Request.


WE ADDED POZZOLITH....EVEN AFTER REDUCING THE WATER 16% WE GOT A 4" SLUMP...WITH THIS INCREASED WORKABILITY TRUCKS WERE BACK ON THE ROAD IN 7 MINUTES.

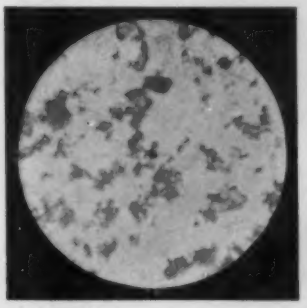
POZZOLITH (Cement Dispersion) also produces the following *construction* advantages:

1. **SPEED**
2. **STRENGTH**
3. **LOWER COSTS**
4. **BETTER CONCRETE**

Are you interested in producing transit-mix concrete which unloads faster and cleaner, and has the four construction advantages given above?

Write or wire for complete information on Pozzolith and copy of Research Paper No. 36—"Economics of Cement Dispersion."

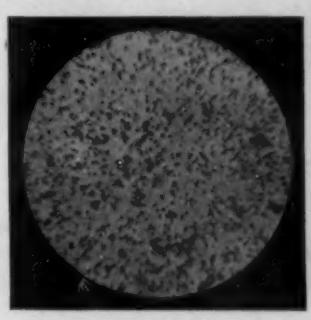
HOW CEMENT DISPERSION WORKS



Cement suspended in water
UNDISPERSED

WITHOUT POZZOLITH

In a normal concrete mix, cement particles tend to bunch together, thereby (1) limiting hydration and (2) trapping water within the cement clumps. (See photomicrograph above.)



Cement suspended in water
DISPERSED

WITH POZZOLITH

Cement Dispersion drives these particles apart and (1) exposes their entire surface area to hydration, at the same time (2) making the water entrapped in the clumps available for lubrication of the mix. (See photomicrograph above.)

THE MASTER BUILDERS CO.
CLEVELAND, OHIO TORONTO, ONTARIO

MASTER BUILDERS

ALLIS-CHALMERS Announces a new line of All-Steel Jaw Crushers!

Simplified Design Eliminates Unnecessary Parts . . . Gives Increased Strength with Compact Construction. Allis-Chalmers Cooperative Engineering Again Gives the Crushing Industry a New Development Designed to Do a Better Job at Lower Cost.

A complete new line of all-steel jaw crushers — that's the latest contribution of Allis-Chalmers Cooperative Engineering to the Crushing industry.

From small fine reduction units to huge primaries, the new design gives you a simplified crusher with no unnecessary parts . . . increased strength with compact construction.

Study the photographs on these pages. They show how advanced engineering gives you an improved jaw crusher — a machine that was formerly considered to have reached its peak efficiency.

Allis-Chalmers Cooperative Engineering service is the result of the vast experience and facilities of the world's largest manufacturer of rock and ore reduction machinery. Whenever you have a production problem, call on one of our trained engineers in the district office near you. He'll work with your own engineering staff . . . help give you the right answer to your problem. Allis-Chalmers.
Milwaukee, Wis.
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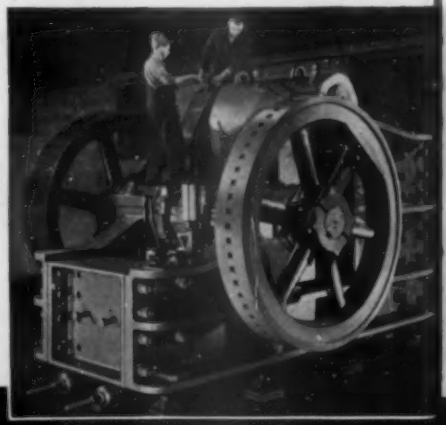
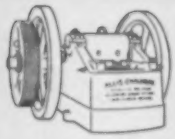


FINAL STAGES OF assembly on a 48 in. by 42 in. crusher. Note automatic lubrication equipment that delivers proper supply of oil or grease to every part of the unit at regular intervals.

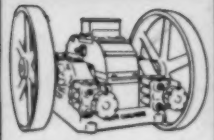
Get "All Out" production with ALLIS-CHALMERS



Jaw Crushers—Primary and Fine Reduction

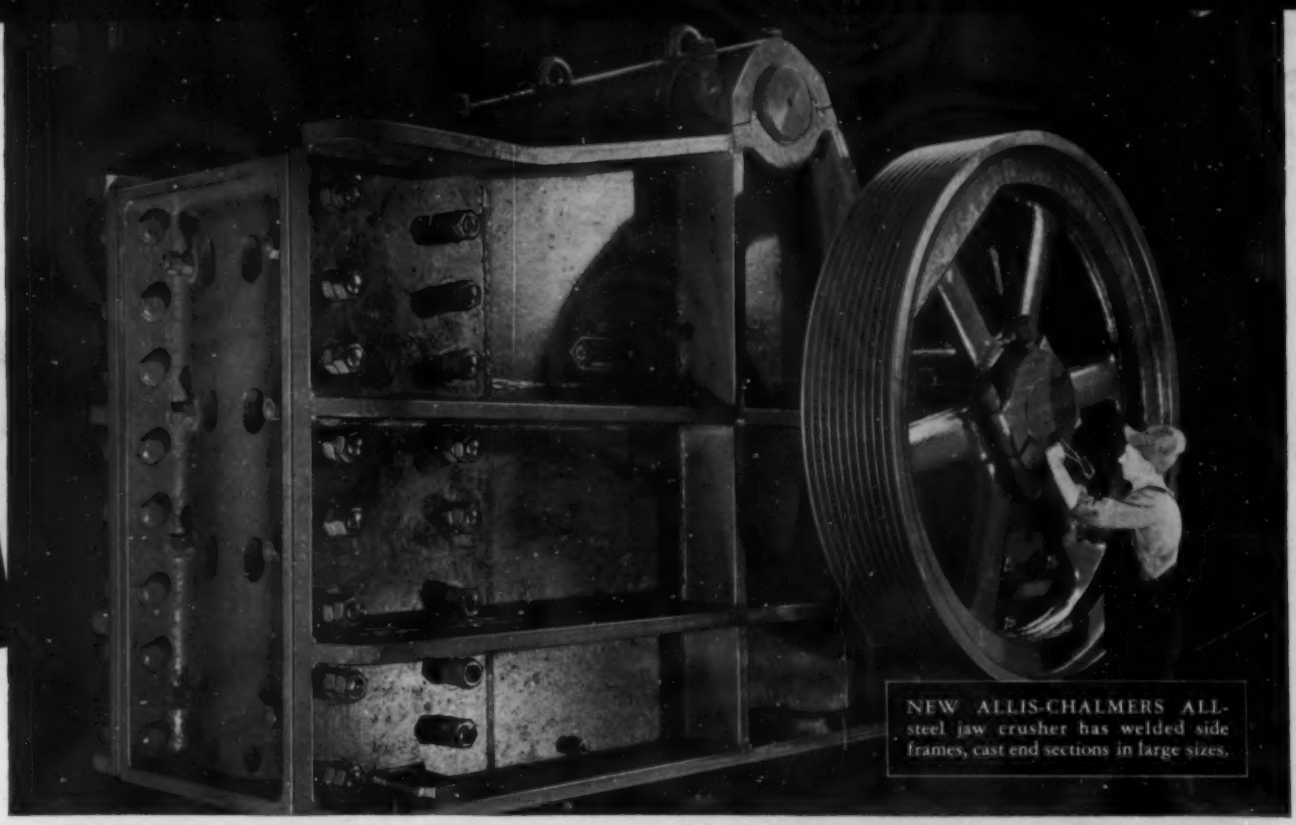
Large Gyratory Crushers Up to 60 in.

Type "R" Crusher with "Speed-Set" Control

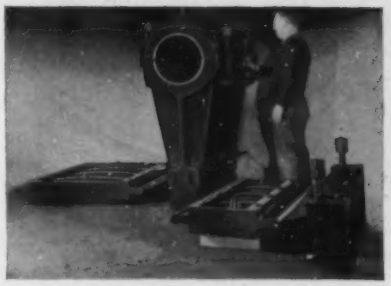


Crushing Rolls for Granular Products

Pulverators (Multi-impact Hammer Mills)



NEW ALLIS-CHALMERS ALL-steel jaw crusher has welded side frames, cast end sections in large sizes.



MINIMUM PITMAN WEIGHT WITH maximum strength is gained with longer throw eccentric and toggle plates.

IN SMALL SIZES, THE NEW ALLIS-CHALMERS all-steel jaw crusher has all-welded construction. Here is shown a 36 in. by 20 in. frame.

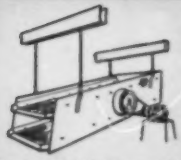
NEW SWING JAW'S REMOVABLE TOE piece overcomes former difficulty of keeping jaw plates in position.

WELDED SIDE FRAME COMES FROM annealing furnace. Heavy steel plate with adequate ribbing gives rigid construction.

ONE-PIECE, ALL-WELDED FRAME. Steeper angle of nip minimizes slipping, reduces jaw plate wear, gives high capacities.

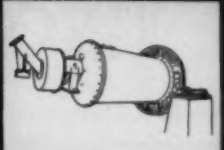
COOPERATIVE ENGINEERING

ALLIS-CHALMERS AC MILWAUKEE

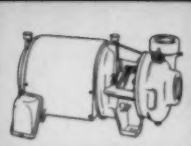


Low-cost, High-capacity Ripl-Flo Screen

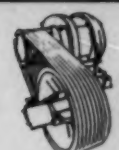
Kilns, Coolers, Dryers for Cement and Lime



Cylindrical Grinding Mills — 30 Different Types



Electrifugal Pump — Compact, Low-cost



Lo-Maintenance Motors, Texrope V-Belt Drives

FM-2 FLEXIBILITY and DEEP-HOLE DRILLING POWER

Save time and money

One of 42 FM-2 Wagon Drills used on this job. The ease with which they can be set up, regardless of the ground, speeds up the work.

This quarry lies at a 43° angle. The flexibility of the FM-2 Wagon Drill cuts drilling costs. A small I-R air hoist mounted on the unit moves it up and down the incline.

The flexibility of the FM-2 Wagon Drill permits its use in all kinds of ground. Holes can be drilled at any angle—wherever you want them. A fast, convenient, portable method is thereby provided for using the powerful Ingersoll-Rand X-71 WD drifter drill. Twenty-foot steels are handled easily. Set-up time is reduced and time spent changing steels can be cut in half, so that more footage is drilled in a shift.

The X-71 WD drill used on the FM-2 has been developed especially for wagon drill service. The piston has a long stroke. It hits a heavy hammer blow which has a unique follow-through characteristic so essential for deep-hole drilling. In addition, the drill has powerful rotation and is capable of blowing holes easily to great depths.

Performance records from countless jobs prove that this combination of the specially designed X-71 deep-hole drill and the highly flexible FM-2 three-wheel mounting drills more feet of hole, day in and day out.

SOLVE YOUR DRILLING PROBLEMS WITH IR JACKBITS

KEEP 'EM DRILLING

Ask your supplier for an oil that meets I-R Specification 433 —the new rock drill lubricant developed by Ingersoll-Rand.

Ingersoll-Rand

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Branches or Distributors in other Principal cities the world over.

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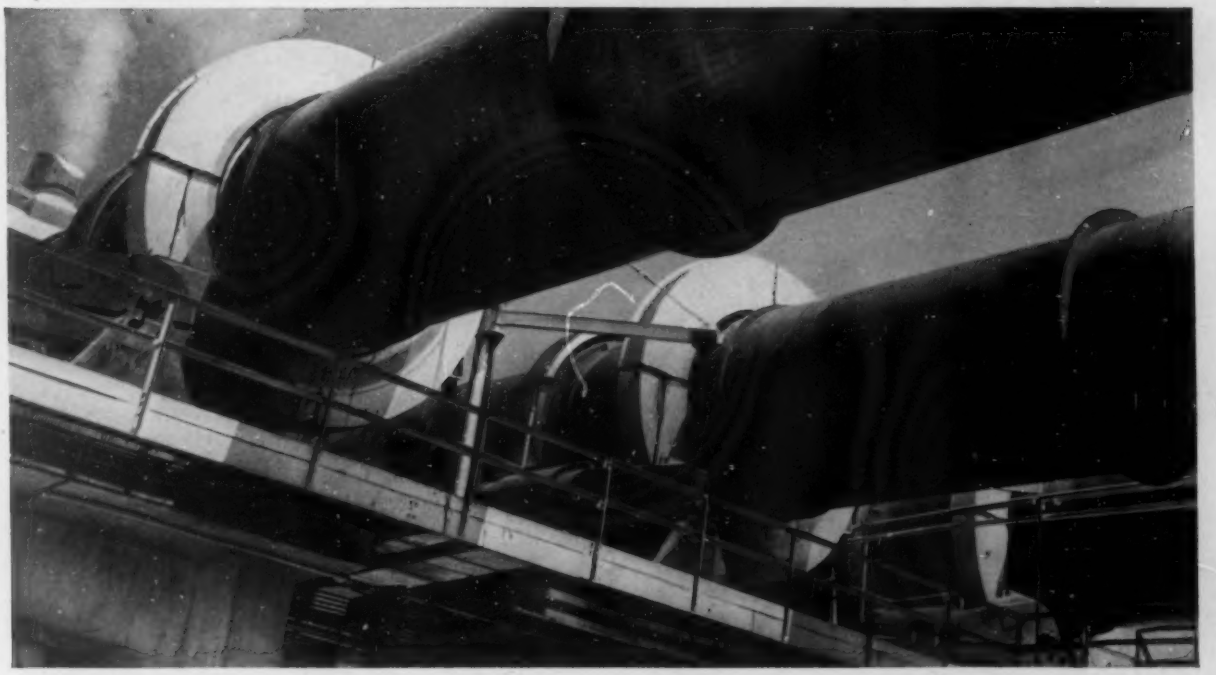
KILNS ★ COOLERS ★ DRYERS



WE BUILD

Rotary Kilns
Rotary Coolers
Rotary Dryers
Rotary Slakers
Scrubbers
Evaporators
Jaw Crushers
Gyratory Crushers
Reduction Crushers
Crushing Rolls
Grinding Mills
Ball Mills
Rod Mills
Tube Mills
Pug Mills
Wash Mills
Feeders
Rotary Screens
Elevators

When TRAYLOR started to build Rotary Kilns, Coolers and Dryers, many years ago, an 8'-0" x 125'-0" Kiln (and correspondingly small Coolers and Dryers) was considered rather large. Since then, the three units have been required of larger and larger diameter, and longer, so that today 10'-0" x 300'-0" is quite an ordinary size, and we have built them up to 12'-0" diameter, and as long as 450'-0".

The prime factor in the design of Traylor Kilns, Coolers and Dryers is intimate knowledge of current and future requirements of users, which has been the principal business of our engineers to obtain. Thus these units are not mere assemblies of metal parts, but mechanical efficiency agencies for the cement, lime, chemical and process industries. That is the reason for the unquestionable leadership of TRAYLOR in this field of endeavor, as evidenced by the decided preference for our Rotary Kilns, Coolers and Dryers, on the part of the world's "greatest" in those industries.

We are making these notes at this time, not for present purposes, but so that, when the world regains its sanity and turns from destruction to the work of reconstruction, there will be a record of where may be obtained equipment of the highest attainable efficiency, which will be vital in the savage competition that, inevitably, will be the order of the day.

SEE OUR BULLETIN No. 115

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ENGINEERING & MANUFACTURING CO.

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MANILA MACH. & SUPPLY CO., INC. Manila and Baguio, P. I.

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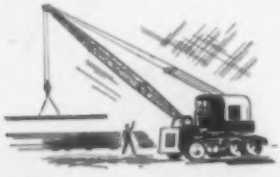
"It's up to his skilled hands to get every hour of extra rope service we put in . . .

Here are some helpful tips you can pass along . . . things that mean even longer life for Roebling "Blue Center" Steel Wire Rope . . . steel saved for U. S. at War!

Lesson One:—take a piece of string and pull it gently . . . you'll find it will stand an unusual strain before breaking. But snap the same string quickly and it's easily broken.

Same thing applies to a wire rope. In any kind of hoisting operation, it's vital that the rope should have no slack at the beginning of the lift—else the load might be applied suddenly and then the impact on the rope will be greatly in excess of weight of the load being handled. So *don't jerk your ropes.*

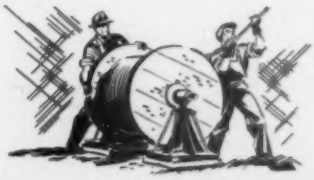


Lesson Two:—a hammer weighing only a few pounds can produce a blow having the force of a couple of tons. The load on a wire rope is like a hammer—striking a blow on the rope whenever you start the load too quickly. Even without slack, the rope gets a tremendous impact when power is applied too fast—as in the case, for instance, when the operator of a shovel moving a boulder tries to knock it out of the way instead of easing it out.

And it's the same when the rope is going the other way. When even a light load is stopped suddenly while being lowered, the rope is subjected to a much greater strain than the equipment could ever apply to it in hoisting. So *don't jolt your loads.* Brakes should be applied smoothly and uniformly, and at the slightest sign of "grab" should be eased off. Brake your load over a longer period and your rope will last over a longer period.

In general, shock loads will remove from the rope the very elasticity that is put in to absorb normal impact, while careful handling will preserve the rope's elasticity and keep it in condition to deliver long life. Of course, the way a machine is run always affects its general maintenance. It's a well-known fact that some people are harder on machinery than others. An operator can push a machine (and a rope) just so far to get extra work out of it—beyond that, the punishment takes its toll of both the machine and the rope—and breakage begins to cost more than the extra work is worth. But in these days when rope steel is vital to the war effort, *wire rope must not be abused.*

Lesson Three:—a pitch-fork was not made to shovel sand. Likewise, "borrowing" ropes is very seldom practical. In these times of priorities and shortages, some operators have been "borrowing" ropes from one operation and installing them on another.



Before you "borrow" a rope, make a careful analysis to see whether you won't get better ultimate economy out of putting the right new rope on the equipment that needs it, and taking the necessary steps to preserve the used rope and make it last on the job it's now doing.

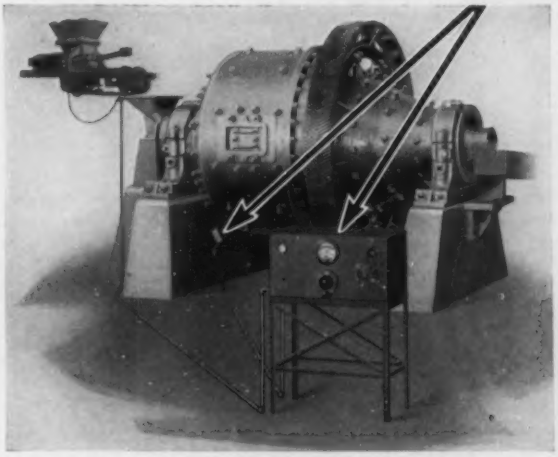
Roebling "Blue Center" Steel Wire Rope is made to deliver a long lifetime of service—it has built a reputation for just that, wherever wire rope has a routine or unusual job to do."

JOHN A. ROEBLING'S SONS COMPANY
TRENTON, NEW JERSEY
Branches and Warehouses in Principal Cities

More ways to help you conserve wire rope coming in this space next month.

ROEBLING
"Blue Center"
STEEL WIRE ROPE
PREFORMED OR NON-PREFORMED

"ELECTRIC EAR" SOUND CONTROL UNIT*



The rate of feeding a Ball, Pebble, Tube or Rod Mill must be closely controlled if a maximum output and a uniform product is to be secured. Such a method of control must compensate for changes in feed size, hardness, moisture and inadvertent changes in the normal feed rate. A sound sensitive instrument recently developed by the Hardinge Company, Inc., known as the "Electric Ear" provides the operator with such a control.

The "Electric Ear" automatically controls the feeding rate to the mill to maintain a predetermined sound level which is indicative of the most satisfactory grinding performance. The "Electric Ear" is equally applicable to wet or dry grinding in open or closed circuit.

ADVANTAGES

The "Electric Ear" maintains a constant load in the mill assuring maximum capacity. Many installations show an increase of 10% or more above that obtained when the Mill is manually controlled. By maintaining a constant load, the wear on the lining and grinding media is reduced. In open circuit grinding the fineness of the product is held constant.

Write for Bulletin No. 42

*Trade Mark Reg. U. S. Pat. Office.

HARDINGE

COMPANY, INCORPORATED - YORK, PENNSYLVANIA

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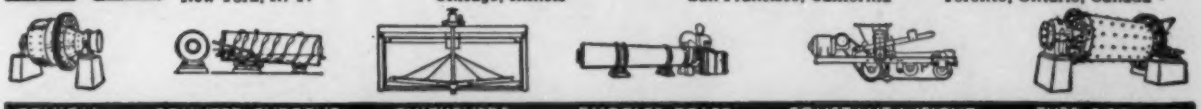


CONICAL MILLS | COUNTER CURRENT CLASSIFIERS | THICKENERS CLARIFIERS | RUGGLES-COLES DRYERS | CONSTANT WEIGHT FEEDERS | TUBE ROD AND BATCH MILLS

A Star Performer ~~Most~~ all of the Year!

Buckeye Clipper with

Pit and quarry men want a shovel that can hit the ball 365 days a year, especially now when maximum production is so important.

Such a shovel is the Buckeye Clipper and its exclusive Mevac Vacuum Power Control makes it so. There are no long levers to tug and tire the operator. Just a few small handles are flipped and you get fast, smooth action. Yet, operator has full "feel" of the work. No air lines to freeze in winter, no condensation troubles in summer.

And Clippers have all of the other features that pay off — independent chain crowd; simultaneous swing, hoist and travel; automatic swing brake; stress resistant tubular dipper stick; safety power brakes all around; dual gear and universal power hook-up that eliminates chain whip and breakages; rugged non-clogging crawlers that really get around in even the toughest going and other features that cut stripping, gravel digging and shot rock loading costs. It's tomorrow's shovel today!

Buckeye Traction Ditcher Co.
Findlay, Ohio

Built by Buckeye

Convertible Shovels

Trenchers

Tractor Equipment

R-B Finegraders

Road Wideners

Spreaders

It's a DOUBLE WHIZZER for Fine Sizing

RAYMOND
MECHANICAL AIR SEPARATOR

Ask for Raymond Separator Catalog No. 45

This is the modern unit you need in closed circuit grinding operations to get greater production and precision in classifying powdered materials.

The *double whizzer* . . . an exclusive Raymond development . . . insures more positive rejection of the oversize, and permits only the selected fines to pass into the finish bin. The result is better product control and greater uniformity in particle size.

The *double whizzer* gives wide range fineness control. You can obtain any degree of classification on cement, for example, from the standard grades to the high early strength cements simply by adjusting the vertical slide plates . . . no internal adjustment required.

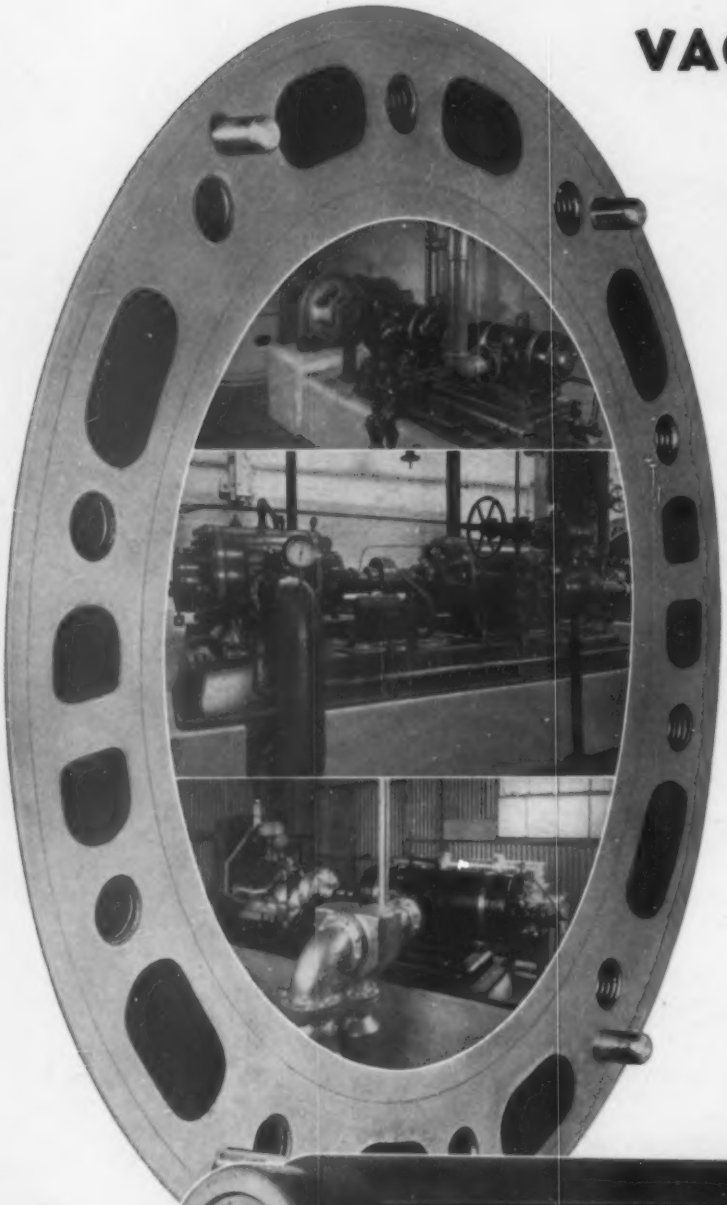
At extreme fineness, you can get record high capacities with the *double whizzer* Separator in classifying such materials as hydrated lime, gypsum, clay, graphite, raw mix, clinker, slate dust, chemicals and many other non-metallic minerals.

for High **EFFICIENCY**
for High **CAPACITY**
for High **FINENESS**

RAYMOND PULVERIZER DIVISION
COMBUSTION ENGINEERING COMPANY, INC.
1307 North Branch Street CHICAGO
Sales Offices in Principal Cities. Canada: COMBUSTION ENGINEERING CORP., Ltd., Montreal

Dependable, Economical Service

FULLER ROTARY COMPRESSORS AND VACUUM PUMPS



Fuller Rotary Compressors and Vacuum Pumps furnish such dependable and economical service, that of the hundreds now in operation, a great many have been installed on repeat orders.

Industry today is taking advantage of the development and refinements of the Fuller Rotary for general industrial use. Fuller engineers have spent years in developing this unit to its present-day standard. This has had its reward, as is attested to by the reliable and economical service provided the many owners of these machines.

Simplicity makes for reliability and, one of the outstanding features of a Fuller is simplicity of design . . . only three moving parts —rotor, bearings, blades. Other features and advantages of Fuller Rotary Compressors and Vacuum Pumps are illustrated and described in Bulletin C-5. Write for a copy today.

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C-64

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EAGLE CRUSHER CO., INC.

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540 tons per day on SKF's

When Eagle engineers designed this primary crusher, they started out with the premise that a good crusher must have good bearings. They knew that a *producing* crusher must have high capacity bearings that also compensate for shaft and housing deflections . . . that are self-contained and do not require adjustments for mounting conditions or wear. Consequently, they selected SKF Spherical Roller Bearings for side and eccentric locations. The well-designed crusher is always SKF-equipped.

5080

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"BEWARE of an America aroused!"

Sure we've been rolling on rubber—eating our sirloin steaks—lolling in the luxuries which only free Americans have the God-given genius to create, and the capacity to enjoy. But we can still take it, and we can still dish it out.

The world knows now that this "love of luxury" is just a thin outer garment, easily whipped off in an emergency—and that, underneath it, there are muscles of steel.

Sacrifice? We will sacrifice anything but our Liberty!

Suffering? We still remember about Valley Forge, and the blood of our fathers on the snow!

Death? Better death, any day, than life without freedom!

So they said we'd rather lose a war than lose an election? And those cracks, dividing us, were deep craters—not just surface scratches? Management wouldn't work with men, and men wouldn't work with management? And we couldn't get going *fast enough* to become a real factor in this war?

What a jolt the Axis is in for! You might just as well try to sweep the tide back with a broom as try to buck American machines, driven by free, skilled American workers.

◆ ◆ ◆

Inspired by the job our own workers are doing, we view this crisis, not with alarm—but with confidence. Every lathe, every drill, every tool in our plants has been turned into a weapon of war—every worker, man or woman, into a PRODUCTIONEER—a soldier in overalls. Such spirit, such skill, such strength cannot lose—for these men and women are fighting *with their hearts*, as well as with their heads and their hands—fighting, along with the millions of other patriotic workers throughout all America—to STAY FREE!

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THE LEADING MANUFACTURER OF EQUIPMENT FOR HANDLING MATERIALS AND TRANSMITTING POWER

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Rock Products

309 WEST JACKSON BOULEVARD
CHICAGO, ILL.

June 20, 1942

CANADA'S STAND ON CONSCRIPTION

Kennett R. Wilson

Ottawa, Canada: The question which U. S. businessmen ask most often about Canada is something like this: "Why don't you have conscription? How can you fight an all-out war without it?"

That is a fair question - a question which deserves a fair answer. Briefly the answer is this:

1. Though Canada has always had compulsory service for home defense she has traditionally "glorified" the voluntary enlistment of men for her armed services.

2. Canada has made a greater success of voluntary enlistment than any other country in the world. Over 500,000 men have enlisted voluntarily for service anywhere in the world since 1939. Proportionately this would represent in the United States an armed service of almost 6,000,000.

Despite this extraordinary record, the issue of conscription for overseas service has been on the front pages of every Canadian newspaper for the past month or more. The reason is that the House of Commons here at Ottawa has been debating a resolution to free the government's hands in sending outside this continent, men called up for army training and active service for home defense under the draft plan. The debate follows a national plebiscite in which Canadians were asked whether or not they wished to free the government from "any obligation arising out of any past commitment restricting the methods of raising men for military service". About 3,000,000 Canadians voted, with 64% releasing the government from its previous anti-conscription pledges. In the powerful French-Canadian province of Quebec (traditionally opposed to conscription of men for overseas service) the vote was reversed and seven out of 10 voted "no".

Opposition From Quebec

Following the vote, the government asked Parliament to repeal the clause in the "draft" law which restricts service of "draftees" to home defense. At once, a Quebec cabinet minister and the majority of French-Canadian members of the house "walked out" on the government; said they could not support such an amendment since they had been given no mandate to do so by their constituents. Eventually, Canadians expect, the amendment will be passed though the debate will last a full month.

Passage of the amendment will free the government from any restraint in respect of conscription for overseas service, but that will not mean that Canadian draftees will automatically be sent overseas. The government must still issue a proclamation. It is the government view that at present the need for such a proclamation does not exist.

In Canada, conscription for overseas service, though it has been a political storm center both in this war and in 1914-1918, is by no means the key to Canada's wartime contribution of manpower. On the contrary, it beclouds the amazing contribution made by this country under the voluntary enlistment system.

Over Half Million Volunteers

The democratic way for America to raise an army in wartime is by means of the draft. Canada, for reasons which go deep into the history of French-English conquest and occupation, has held to the voluntary system even that it broke down in the third year of Great War I. She started to fight the present war under voluntary enlistment and today this striking fact emerges:

The total number of men and women who have voluntarily enlisted in the armed forces in Canada for service anywhere in the world is now 505,000.
On a comparable population basis this would represent a contribution of about 6,000,000 United States soldiers, airmen and sailors.
Added to that, Canadians are still enlisting voluntarily at a rate in excess of 15,000 a month (the comparable United States figure would be about 180,000).

Compared to these totals, the number of men which the Canadian army has called under the draft system for home defense (shortly to be enlarged to hemisphere defense) is small--about 56,000. Over a third of these have subsequently enlisted voluntarily in the active (overseas) force.

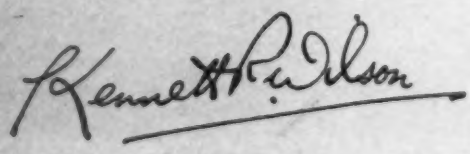
Compulsory military service for the defense of Canada has always been the law of the land. In this war it was reaffirmed by a statute called the National Resources Mobilization Act, 1940. But going back to the early days of Confederation, the Canadian Militia Act of 1868 contained a provision for a levee "en masse" of all male inhabitants from 16 to 60 years of age. It was the law of French Canada during the period of the French regime under the militia act of 1758, and similarly under the feudal law of fiefs.

Looking at the Canadian manpower problem in its broadest perspective the picture is something like this:

Out of a working force of 5,000,000 persons: 1,350,000 are engaged in agriculture. (Canadian farms will supply more than a third of a billion dollars worth of bacon, cheese, eggs, wheat and flour to Britain this year); 800,000 are engaged in production of war materials and supplies. (Canadian war production has for some time been geared to a production rate of $2 billions annually with employment increasing at the rate of 28,000 monthly since the beginning of 1942); 500,000 are in the armed forces; and 300,000 are in essential utilities and mining. This leaves only two out of five (about 2,000,000) to carry on all civilian work.

Comparable figures for the United States would distribute a manpower pool of 56,000,000 as follows: 15,000,000 in agriculture (exclusive of housewives); 9,200,-000 in war industry; 6,400,000 in the armed services; and 3,400,000 in essential utilities and mining - the balance (about 22,000,000) left to carry on civilian occupations.

Thus, one out of every ten of Canada's working population has voluntarily enlisted in the armed services; only one out of 100 has so far been required to be called up for home defense. What is expected to emerge from Canada's present manpower debate in the Commons is a clear commitment from the government that as soon as conscription for overseas service is deemed necessary by the military authorities the government will act accordingly. So long as the present flow of volunteers continues, the government takes the view that conscription for other than home defense is unnecessary and might in fact be detrimental to the Canadian war effort when viewed as a whole.



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The award of the Navy "E" to Nordberg in recognition of outstanding accomplishment is an honor cherished by every Nordberg Employee. In flying the Navy "E" Burgee, we are not only mindful of past accomplishments but accept our future responsibility in the furtherance of the war effort.

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MILWAUKEE

An Announcement by

BUELL ENGINEERING COMPANY, Inc.

* * *

Buell Engineering Company, Inc. announces it is discontinuing its non-exclusive sales agency agreement with B. F. Sturtevant Company, as of August 1, 1942.

This agreement, entered into in March, 1939, authorized the B. F. Sturtevant Company to sell in their name Buell (van Tongeren) dust collectors in the continental United States and Alaska on a commission basis. Buell however has been entirely responsible for the design, construction and operation of all Buell (van Tongeren) dust collectors sold by Sturtevant.

After August 1st, 1942 all inquiries for Buell equipment and services should be directed to Buell Engineering Company, Inc., 70 Pine Street, New York City, or to the company's own established sales representatives located in principal cities as follows:

Atlanta, Ga. — MOORE-BROACH ENGINEERING CO. . . . . 412 Title Building
Buffalo, N. Y. — HENRY F. SPROULL . . . . . 319 Jackson Building
Chicago, Ill. — D. H. SKEEN & COMPANY . . . . . 1 La Salle Street
Dallas, Texas — A. M. LOCKETT & CO., LTD. . . . . 305 Magnolia Building
Detroit, Michigan — THE POE COMPANY . . . . . 2842 West Grand Blvd.
Houston, Texas — A. M. LOCKETT & CO., LTD. . . . . 1014 Electric Building
Milwaukee, Wisc. — THE DORNER COMPANY . . . . 2766 North Downer Avenue
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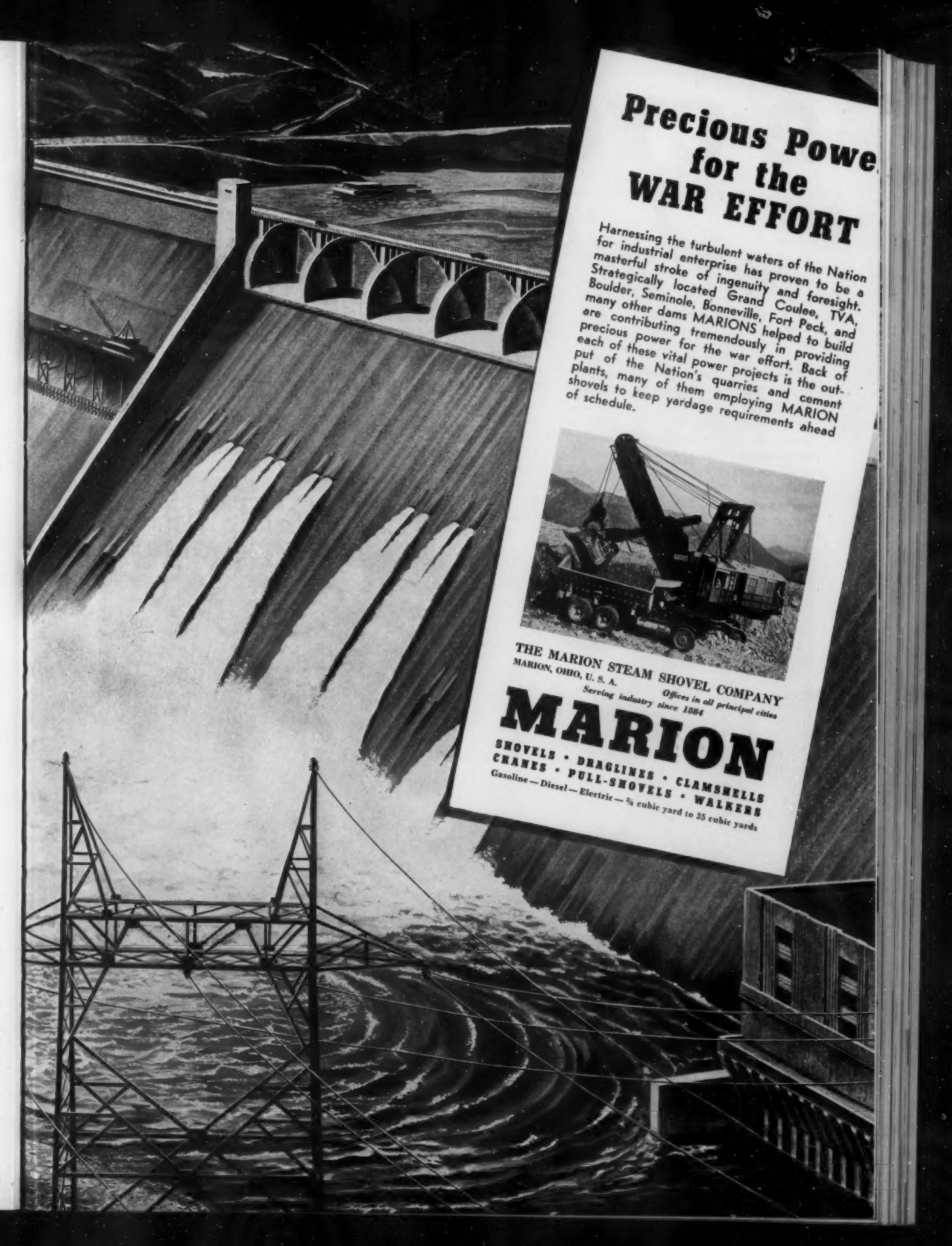
DUST RECOVERY SYSTEMS

BUELL ENGINEERING COMPANY, Inc. • *70 Pine Street, New York*


Precious Powe
for the
WAR EFFORT
Harnessing the turbulent waters of the Nation for industrial enterprise has proven to be a masterful stroke of ingenuity and foresight. Strategically located Grand Coulee, TVA, Boulder, Seminole, Bonneville, Fort Peck, and many other dams MARIONS helped to build are contributing tremendously in providing precious power for the war effort. Back of each of these vital power projects is the output of the Nation's quarries and cement plants, many of them employing MARION shovels to keep yardage requirements ahead of schedule.
THE MARION STEAM SHOVEL COMPANY
MARION, OHIO, U. S. A.
Offices in all principal cities
Serving industry since 1884
MARION
SHOVELS • DRAGLINES • CLAMSHELLS
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Gasoline — Diesel — Electric — ¾ cubic yard to 35 cubic yards

2-CYCLE/DIESEL

it's Thrifty!

You went from gas to Diesel to save on fuel cost. Now you also get smooth operation, instant starting and low maintenance. You save in all ways with the 2-Cycle Diesel! Operating on *ordinary* Diesel fuels . . . this modern Diesel purrs along under full load as smoothly as your automobile. Because of the Unit Injection System, eliminating complicated fuel pumps and troublesome high pressure fuel lines, fuel is thoroughly atomized, burns completely and develops maximum power. 2-Cycle power means a more simple engine . . . fewer parts; lighter parts, because there's less vibration, less shock load, less wear and tear on engine and tractor. No need to let it idle either when there's a delay. Instant electric starting saves your fuel . . . adds extra life to your engine. No matter how you look at it—cost per yard . . . cost per mile . . . fuel cost . . . operating cost or maintenance cost . . . you save with the 2-Cycle Diesel. There's less maintenance, less down time, more working time, MORE PROFITS!

Today, the 2-Cycle Diesel is cutting war construction costs . . . hurrying the completion of vital contracts . . . serving on every front! Tomorrow, it will bring its thrifty advantages to every user. Get all the facts . . . Now . . . on this Diesel of the future! Write for our booklet, "Modern Tractor Power."

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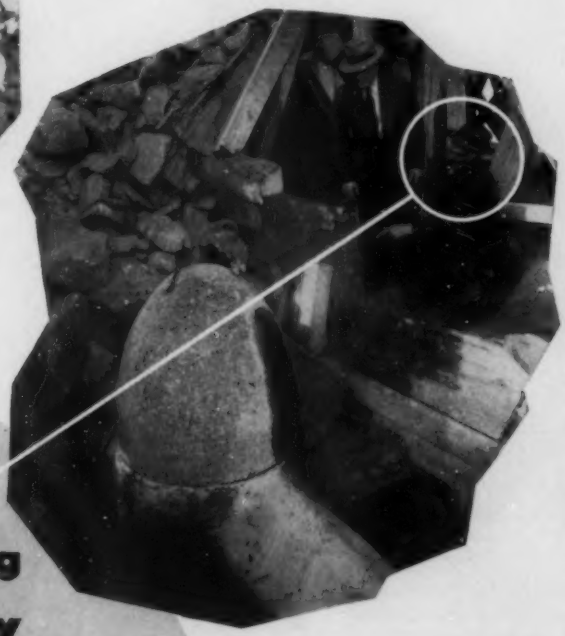
2-cycle THE MODERN DIESEL POWER

CONSERVE YOUR TRACTORS

Take every precaution to keep your tractors in A-1 shape. If you lack priority, it may be sometime before you can get new outfits. Check the engine, tracks, rollers, pins, bushings, gears, sprockets, clutches, etc. on every unit. One worn part can cause a whole chain of trouble. Your Allis-Chalmers dealer is prepared to give you excellent service on any repair, replace or rebuild job. He may have good buys on used tractors, too! See him . . . Now!

(Below) Actual photo of a Gulf engineer consulting with General Superintendent on cone crusher lubrication.



"Gulf Lubrication is a big help to profitable quarry and plant operation"

Says this General Superintendent

By following Gulf Engineering recommendations, we get efficient, dependable performance from all our equipment, and keep our maintenance costs at a very low figure.

"THE quality lubricants and lubrication methods recommended by a Gulf engineer play an important part in the profitable operation of our quarry and plant," says this General Superintendent. "By providing maximum protection against excessive wear and mechanical delays, they help us keep tons per hour up and maintenance costs down."

This is one of many leading producers of crushed stone and aggregate which enjoys high rates of production and low maintenance expense with Gulf quality lubricants in service. For Gulf lubricants have been manufactured to afford full protection to the moving parts of all types of quarry and plant equipment, even under severe operating conditions. Built into these lubricants, is remarkable *stability* and *endurance*—they have the stamina to stand up and take it when the going gets tough.

Is any of the equipment in *your* quarry or plant vulnerable to breakdowns due to multiple-shift operation? Play safe—ask a Gulf engineer to check it over and recommend the proper application of the right Gulf lubricants.

The services of a Gulf engineer—and the Gulf line of more than 400 quality oils and greases—is available to you from 1200 warehouses in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

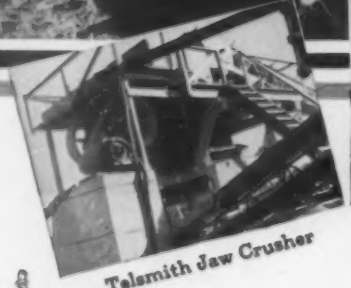
OIL IS AMMUNITION— GULF INDUSTRIAL LUBRICATION ***—USE IT WISELY!***

GULF OIL CORPORATION • GULF REFINING COMPANY • PITTSBURGH, PA.

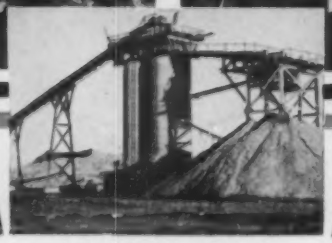
TELSMITH Gravel Plant

goes all out

FOR WIN-THE-WAR CONSTRUCTION



Telsmith Jaw Crusher



Telsmith Sand Tanks

Telsmith Gyrasphere

★ Minus and plus ¾" and minus 1½" gravel, and sand is in demand for war projects in the vicinity of Pawtucket, R. I. Starting operation Nov. 1, 1941, this new Telsmith equipped gravel plant of J. J. McHale & Sons near Pawtucket is turning it out at about 125 to 150 tons per hr.

A 1¼ cu. yd. shovel and two end dump trucks feed raw bank run gravel into an 8 cu. yd. hopper having a railroad rail grizzly that rejects the few oversize boulders. A 30" x 5'6" Telsmith Reciprocating Plate Feeder feeds material out of hopper and over a No. 450 Telsmith Rotary Grizzly with 3¼" spaces. Plus 3¼" goes to an 18 x 30 Telsmith Roller Bearing Jaw Crusher. A 30" x 73' belt conveyor takes minus 3¼" direct from the grizzly, and from the jaw crusher, to a 4' x 10' Telsmith Single Deck Pulsator. Plus 1½" from this scalping screen goes into a No. 36 Telsmith Gyrasphere Crusher; and when crushed returns to the 30" primary conveyor via an 18"x48'6" conveyor.

Minus 1½" from the scalping screen goes via a 24" x 186'6" finished product conveyor to a 5' x 12' Telsmith 2-Deck Pulsator for washing and sizing. Sand is flumed to two No. 8 Telsmith Sand Tanks on a tower independent of main plant. The two sizes of gravel are deposited in two 20' diam. concrete-block silo bins, fitted with bin gates for loading into trucks.

Why do so many operators with war construction jobs depend on Telsmith? Because Telsmith equipment can be pushed to *top speed* and *will produce*. Telsmith Engineers' plant planning is sound. Telsmith Service is fast. *Get Bulletin G-11.* G-10

SMITH ENGINEERING WORKS, 508 E. CAPITOL DRIVE, MILWAUKEE, WISCONSIN

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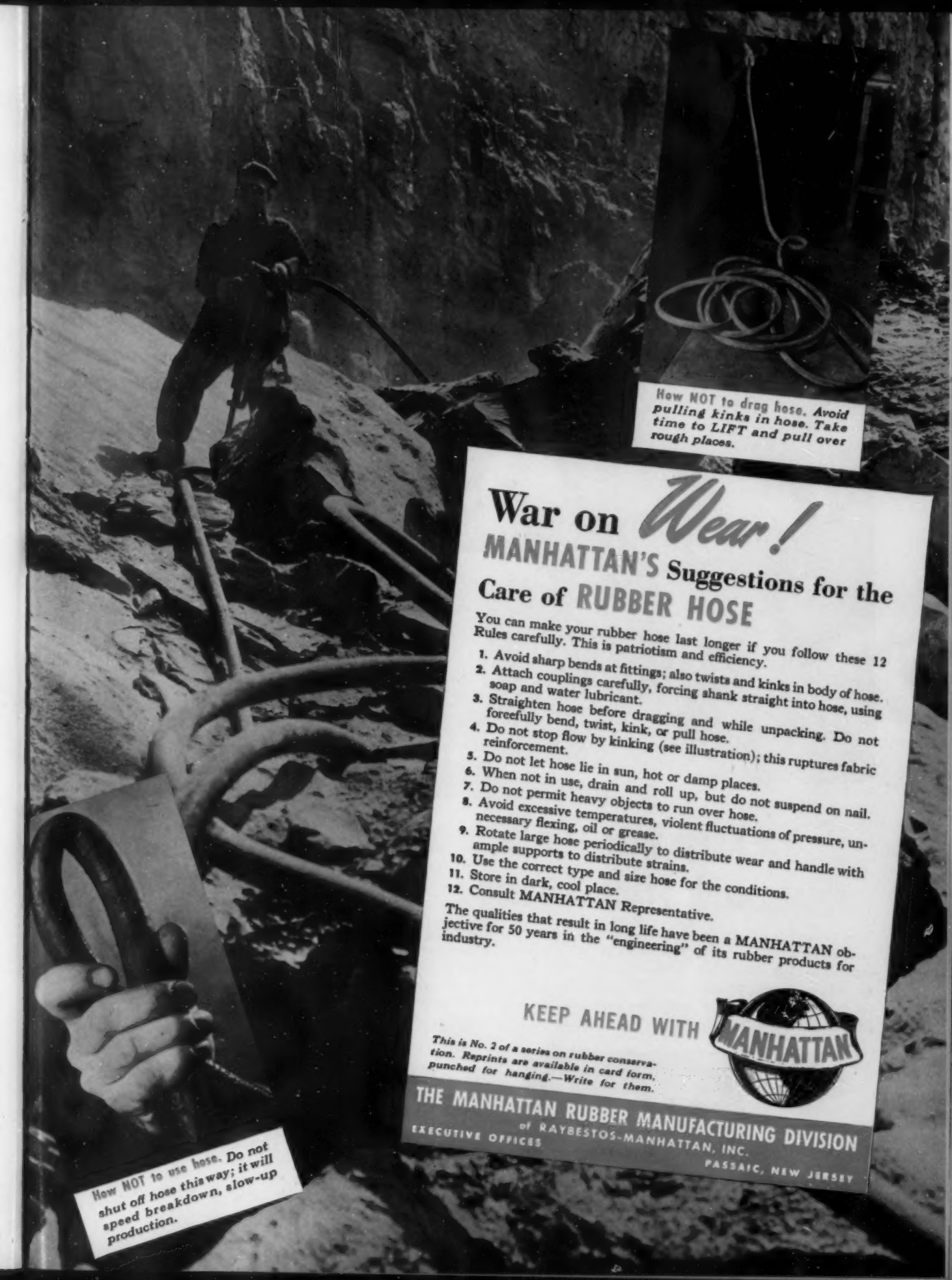

How NOT to drag hose. *Avoid pulling kinks in hose. Take time to LIFT and pull over rough places.*

War on *Wear!*

MANHATTAN'S Suggestions for the Care of RUBBER HOSE

You can make your rubber hose last longer if you follow these 12 Rules carefully. This is patriotism and efficiency.

1. Avoid sharp bends at fittings; also twists and kinks in body of hose.
2. Attach couplings carefully, forcing shank straight into hose, using soap and water lubricant.
3. Straighten hose before dragging and while unpacking. Do not forcefully bend, twist, kink, or pull hose.
4. Do not stop flow by kinking (see illustration); this ruptures fabric reinforcement.
5. Do not let hose lie in sun, hot or damp places.
6. When not in use, drain and roll up, but do not suspend on nail.
7. Do not permit heavy objects to run over hose.
8. Avoid excessive temperatures, violent fluctuations of pressure, unnecessary flexing, oil or grease.
9. Rotate large hose periodically to distribute wear and handle with ample supports to distribute strains.
10. Use the correct type and size hose for the conditions.
11. Store in dark, cool place.
12. Consult MANHATTAN Representative.

The qualities that result in long life have been a MANHATTAN objective for 50 years in the "engineering" of its rubber products for industry.

KEEP AHEAD WITH MANHATTAN

This is No. 2 of a series on rubber conservation. Reprints are available in card form, punched for hanging.—Write for them.

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES
PASSAIC, NEW JERSEY

How NOT to use hose. *Do not shut off hose this way; it will speed breakdown, slow-up production.*

Trucks like planes are weapons of war . . .

Keep your trucks in action with Mack Service

Vital to the war strength of the nation are the trucks that carry its goods. To conserve these trucks and to keep them working at peak efficiency is an urgent need of the times. At 70 Mack factory branches and 400 dealers throughout the country Mack-trained mechanics work with specialized service tools to "keep 'em rolling." To insure the longest possible life for your trucks bring them to the nearest Mack branch or dealer. Consult your local Mack Service Manager about the Mack Preventive Maintenance Plan, a practical system of periodic check-ups which will save you money by correcting minor troubles before they develop into serious ones. Mack Trucks, Inc., Long Island City, N. Y.

Mack

THE MOST COMPLETE LINE OF TRUCKS IN THE WORLD — 1 to 45 TONS AND ALL HEAVY DUTY

HOW TO OPERATE UNDER ALLOCATION ORDER AND P–56

ALMOST ILLUMINATING discussion of how the rock products industry must operate under Mining Branch, W.P.B., Order P-56 and the mining machinery manufacturers under P-56A, was that conducted at the Pennsylvania Stone Producers Association meeting in Harrisburg, April 30. Dr. Marcellus H. Stow, assistant administrator, Mining Branch, W.P.B., and E. W. Bauman, technical advisor of non-metallics, W.P.B., were present and in addition to explaining the general features of P-56, answered many specific questions which are bothering all producers everywhere.

Beginning July 1, or before this issue of ROCK PRODUCTS is in the readers' hands, the working methods of the W.P.B. will have been changed, under Priorities Regulation No. 10, which sets up an Allocation Classification System. However, it appears from all the evidence available at this writing that the functioning of the Mining Branch under P-56 and P-56A will not change materially, if at all. The new allocation system is aimed to insure that no machinery manufacturer or metals processor has now or can accumulate more inventory of raw material than he needs to take care of more or less imperative orders. How imperative his orders are will still depend largely on the functioning of the present priorities method, with over-all rationing of industry according to its importance to the all-out war effort.

The regulation itself states:

The purpose of the Allocation Classification is:

(1) To obtain standardization and reduce the rules of different forms for allocation purposes that industry now must submit to the W.P.B.

(2) To furnish information needed by the W.P.B. in the allocation of materials.

To allocate intelligently, it is necessary to know the subdivision of the war, industrial and civilian programs for which materials are going to be used. For example, it is essential to know whether the materials are going to tanks, or destroyers, or railroads, or to office machinery and supplies in order to determine allocation policy. In addition, it is necessary to know in a general way what type of purchasers will eventually receive particular products of industry, i.e., whether the products will eventually be delivered to the Army, Navy, etc.

Accordingly, a dual classification system has been provided consisting of Allocation Classification Symbols (in the form of numbers), which will designate the particular kind of product for which material ordered will be used and Purchasers' Symbols (in the form of letters) to indicate the general type of purchasers to which delivery will be made.

Neither the allocation classification symbols nor the purchasers' symbol are intended to indicate order of importance, but are merely designed to provide a convenient means.

(1) of identification of the subdivision of the program for which the products or materials ordered are destined;

(2) of identification of the type of ultimate purchaser of the product; and

(3) of transmitting such identification on down through industry to the original suppliers of the material.

In this new classification we find that metal production and mining is in a separate subclassification from that which covers production (and mining) of all other raw materials except coal, coke, petroleum, etc., but in this same classification are also lumber, glass, textiles. This may be no more significant than the separation of the rock products mining group last winter, which deprived it of A-3 priorities retained by the metal mining and coal mining groups, because these are critical materials and rock products are not. In other words, these industries as a class are not entitled to any special preferment, but will get preferment according to their necessity to some one or more war projects. Operation under P-56 has already simmered down to that so no great change may be anticipated.

The allocation symbol "8.90" is the one for the classification under which rock products materials come. (The symbol 8.10 is for metals and 9.20 petroleum and 9.30 coal and coke.) Apparently lime as a construction raw material would come under 8.90, but if it can be proved an essential chemical, it should come under the symbol 8.20 (all chemicals). In other words, there is a possibility that lime (and metallurgical limestone) can have two classifications.

The symbols designed to show the purchaser are: The Army, U.S.A.; the Navy, U.S.N.; Lease-Lend, L.L.; other foreign purchasers, F.P.; domestic purchasers, D.P. These symbols, preceding the 8.90 should appear on all orders, already placed, as well as those placed after July 1. If any producer is in doubt as to what symbols to use he should apply to the W.P.B. for instructions. The symbols U.S.A. and U.S.N., presumably can be used only where the project rating has been extended to the materials supplier by the proper officer in charge of the project. The regulations will probably require that a certain minimum percentage of the plant output is for such a project.

HOW THE W.P.B. HELPS

PURPOSE: (1) The purpose of the Mining Branch of the W.P.B. is to insure the mining industry getting absolutely necessary machinery, equipment and supplies, and not to prevent their getting them.

(2) The operator must supply the necessary supporting data with his application for priority treatment. (There is a special form for this purpose.) If he wants quick action he must supply *all* the necessary data at the time and not compel the Mining Branch to ask for more.

(3) The operator must not ask for a higher priority than is necessary to get what he needs. The machinery supplier can tell him what rating will be necessary.

(4) The sole test of the operator's need of a piece of equipment is its contribution to the war effort.

(5) Do not attempt to expand your operation by purchase of new equipment unless there is no other alternative.

(6) Because the rock products industries are not producing "critical materials" their A-1-c rating (for emergency repair parts in anticipation of break downs) does not provide for an automatic quota rating, as other mining industries have. Like the A-1-a rating it is a "request rating" and each such application must be passed on by the Mining Branch.

(7) An A-10 rating may be used for office supplies at the plant office of a mine, but not for the general office elsewhere.

(8) After the priority ratings have been made by the Mining Branch of W.P.B., they must still be approved by the Army and Navy Munitions Board.

(9) A-8 ratings do not apply to machinery or equipment—only to operating supplies and repairs.

(10) You must report monthly on PD-119 form whether you have bought anything or not. Otherwise you won't be on the "live list."

SPECIFIC CASES

TRACTORS: Very hard to get. Army taking most of those available—but under special circumstances can be diverted to mining operations.

TRUCKS: No heavy trucks. Those less than 25,000 DCW can be obtained for hauling mine raw materials. Apply first to the local rationing board. Mining Branch will be consulted by the Automotive Branch of the Office of Defense Transportation on all matters of allocation of trucks to mine operators—these are in Class 2. Local rationing boards frequently are not familiar with the preferred position of mine operators. It is very difficult to get by the local board's rejection.

TIRES: Regulations *do* authorize tires for mine trucks. Local rationing boards may not know this. There are reserve quotas at the disposal of both the State Rationing Administrator and National Rationing Administrator, if the local Rationing Board's quota will not provide the needed tires.

CONVEYORS: An extension of a conveyor is new equipment. Operator must apply for a special rating to get it.

FUEL OIL: Not under P-56. Strictly allocated in the East. Must apply to Petroleum Coördinator's Office, Form 39.

USED EQUIPMENT: You can sell or exchange used equipment, or unused inventory only with other mine operators (those with serial numbers) if the equipment has been obtained through priority orders. If not, you can sell or exchange it anywhere.

WELDING RODS: An A-8 rating only; merely schedules your order with the supplier. Electric welding rods very hard to get because of ship-building program. Acetylene rods are available and operator can get prompt delivery.

HARD RUBBER TIRES: Only possible chance of getting hard rubber truck tire is through Technical Section of Rubber and Rubber Products Branch of W.P.B. Not under P-56, but Mining Branch will help in individual cases.

TRUCK RADIATOR: Can get it through P-56—probably an A-1-c rating.

MACHINERY MANUFACTURERS: A machinery manufacturer can operate under both PRP and P-56A. Only requirement is that his books show separate inventories.

ASPHALT, CONCRETE PLANTS: If you are operating a bituminous paving plant, a ready-mixed concrete plant, or a concrete products plant, you have no right to buy machinery, equipment, or repair parts for it under P-56, even though you may have obtained a serial number for it in the early stages. You should ask the Mining Branch, W.P.B., to withdraw such serial number before they catch up with you, for then you will be in bad. If you have an asphalt paving plant *set* up on the site of a government defense project you can get priority under PD1A, which is an extension of the project priority. If the plant is elsewhere and merely serving the job you have to use PD3A, which permits nothing better than an A-10 rating.

LOCOMOTIVES: Make application through the Office of Defense Transportation. The Mining Branch of W.P.B. has a working arrangement for the release of mining locomotives, which, incidentally, were not intended to be included in the restrictive orders of the O.D.T.

GENERAL APPLICATIONS

(1) Accept restrictions in a spirit of coöperation and make the best of conditions that must be.

(2) At present there is no distinction between flux stone (metallurgical limestone) and commercial crushed stone. There is probability that flux stone will be declared a critical material.

(3) Agricultural limestone is the same classification as commercial crushed stone and P-56 covers only its production and processing—*not* its packaging or other preparation for shipment or distribution.

Nathan C. Rockwood

NEWS ABOUT PEOPLE

Appointed Chief Chemist

H. L. VANDERWERP, son of the late H. Vanderwerp who was vice-president in charge of operations of the Medusa Portland Cement Co., has been appointed chief chemist for all

H. L. Vanderwerp

the company's plants. This is a newly-created position with the company. Mr. Vanderwerp, for eight years has been in charge of the research laboratory which is located at Wampum, Penn. He is in charge of chemical research in addition to chief chemist and now has his headquarters at the main office in Cleveland, Ohio. Kenneth Bendig, his assistant in the laboratory at Wampum, is now in charge of the research laboratory there.

Heads Up W.P.B. Construction

WILLIAM V. KAHLER, on leave as chief engineer of the Chicago area, Illinois Bell Telephone Co., and since May, 1941, head of the Construction Branch, Production Division, will be Chief of the new Construction Bureau consolidating the construction functions of the War Production Board. In this capacity he will be a member of the Plant Site Board. As part of the Production Division, the Bureau will service all construction essential to the war effort, recommend construction project priority ratings, apply the principles of conservation of essential materials to construction projects, and administer Conservation Order L-41 which places all private construction under rigid control. The consolidation makes it possible for all applications for construction, except those of the Army and Navy, to be handled by a single W.P.B. agency.

In the Navy

GEORGE G. HAYDEN, formerly with the Portland Cement Association, New York, is now a lieutenant in the Civil Engineering Corps, U.S.N.R., assigned to the Department of Buildings and Grounds at the Naval Academy, Annapolis, Md. Before joining the Portland Cement Association, Lt. Hayden was employed by the New York Board of Water Supply.

Managing Pipe Concern

WILLIAM R. PURCELL, Bownemont, W. Va., who was present at the first meeting of the National Sand and Gravel Association, is now manager

William R. Purcell

of the Charleston Concrete Pipe Co., Charleston, W. Va.

Mr. Purcell was engaged to design the material-handling arrangement for the Union Concrete Pipe Co., Ceredo, W. Va., and wound up in the pipe business when he designed the Charleston plant. Both companies are headed by Jack Richmond, president, whose past history also dates back to the early days of the National Sand and Gravel Association, in Huntington, W. Va.

Mr. Purcell, among his past affiliations, was chief engineer of the Ohio Gravel Co., Cincinnati, Ohio. He also was associated with the Ideal Supply Co., Huntington, W. Va., and the Ohio River Sand Co., Louisville, Ky. He finds the concrete pipe business interesting, and it fits in well with some of his early experience in the municipal field.

Honor Warner Co. Head

CHARLES WARNER, president and chairman of the board of directors of Warner Co., Philadelphia, Penn., was one of the nine graduates of

Charles Warner

Drexel Institute of Technology recently honored by their alma mater at the 49th annual commencement exercises of the college. The honorary degree of Doctor of Science was conferred upon Mr. Warner, who is a graduate of the Class of 1898, and a member of the board of trustees of the college. Besides his position as president of the Warner Co., he is president and chairman of the board of directors of the American Lime and Stone Co.; director of the North American Cement Corp.; and director and member of the executive committee of the Atlas Powder Co.

Honored by Va. Engineers

C. GRADY CATES, sales manager of Cinder Block Inc. of Roanoke, Roanoke, Va., was elected president of the Virginia Society of Engineers at their annual meeting which was held jointly with that of the Virginia Society of Architects.

M. P. Operating Head

L. A. WAGNER, formerly chemical engineer of the Missouri Portland Cement Co., St. Louis, Mo., has been appointed general superintendent of the company to fill the vacancy created by the resignation of R. G. Uhlig, vice-president and operating manager. V. E. Wessels, formerly research chemist, succeeds Mr. Wagner as chemical engineer.

To Texas

CYRUS J. TAYLOR, recently in charge of engineering for the New York plant of National Gypsum Co., replaces Lewis R. Sanderson as superintendent. Mr. Sanderson has been made general manager of the new Bluebonnet Ordnance plant now under construction in Texas. Dudley C. Chads goes to the new plant as production manager, and Maurice C. Crook succeeds Mr. Chads as superintendent of the company's Medicine Lodge plant.

Successful Farmers

W. B. MOUNT AND J. B. MOUNT, president and secretary-treasurer, respectively, of Maymead Lime Co., Shouns, Tenn., producers of agricultural limestone, got into the business because farming was their profession. They are owners of Maymead Farms, Inc., which raises pure bred cattle and sheep that roam the countryside on their property of 2000 acres.

W. B. Mount

J. B. Mount

A deposit was opened up in 1930 to get out their own needs of about 1700 tons annually and out of it grew a volume of 75,000 tons in 1941. Maymead Lime Co. is a subsidiary company. Location of the plant and farm is on property owned and occupied by the Mount ancestors since back in George Washington's time.

Both the Mounts are graduates in agriculture, W. B. Mount from the University of Tennessee and J. B. Mount from the Stors School of Princeton Universitv. W. B. Mount is in charge of production of agricultural limestone and the operations of the farm while J. B. Mount is in charge of sales for both.

The Mount families live on the farm and are leaders in Johnson county on matters concerned with the war effort, including O.C.D., the Red Cross and the administration of selective service. They also have a 1600 acre farm in North Carolina, just a mountain away from Shouns.

To W.P.B.

JAMES P. BARNES, treasurer, Alabama Asphaltic Limestone Co., Birmingham, Ala., succeeds L. E. Geohegan as Alabama district manager of the War Production Board in charge of priorities, conservation and production.

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CARL A. KELLEY, former field sales engineer for the Harnischfeger Corp., Milwaukee, Wis., at Sullivan, Ind., has been appointed a technical advisor to the Mining Branch of the War Production Board for Illinois and Indiana.

Retires

J. G. TRESSEL, stone quarry operator near Ada, Ohio, for 53 years, has announced his retirement.

Leaves Calcium Products

C. W. BLACKETER, formerly sales engineer, Pure Calcium Products Division, Diamond Alkali Co., Painesville, Ohio, is now director of developments, Martin Varnish Co., Chicago, Ill.

On Research Board

BERNARD L. MCNULTY, president, Marblehead Lime Co., Chicago, Ill., has been re-elected vice-president of the board of Armour Research Foundation.

On Airport Job

FRANK DUNN is job superintendent, LOU PECK is in charge of gravel and hot plant operations, and VERN WILSON is supervising grading operations on the $250,000 contract for clearing, grading and paving an air field in Nevada. The contract is held by the Dodge Construction Co., Inc., Fallon, Nev.

Secretary Resigns

R. W. MEAD, who for the past six years has been secretary-treasurer of the National Concrete Burial Vault Association, Cleveland, Ohio, resigned effective June 1. Mr. Mead also had been editor of the association publication, *The Concrete Vault Age*, for the past seven years. Frank L. Mathies, former president of the association and prominent manufacturer of concrete burial vaults, is to be Mr. Mead's successor.

Trustee for Superior Lime

W. F. SCHAEFER was appointed trustee recently for the Superior Lime & Hydrate Co., Pelham, Ala. Mr. Schaefer, who had served as receiver for the company, submitted a report showing the company had operated at a substantial profit. The company will continue in operation.

Appointed City Engineer

J. J. FLICKINGER, former engineer for the Ohio State Highway Department, has been named city engineer of Niles, Ohio, on a provisional appointment to succeed R. J. MacLean, who resigned recently.

Exploration Geologist

WILLIAM O. JENKINS has been employed as exploration geologist by the Calaveras Cement Co., San Francisco. He was formerly superintendent of the Mount Tobin Quicksilver Co. operations near Winnemucca, Nev.

Lime Association Officers for 1942

K. L. HAMMOND, Keystone Lime Works, Inc., continues as chairman of the Board of Directors, National Lime Association, and there were no changes in the other officers, President, S. Walter Stauffer; Secretary and Assistant Treasurer, W. Vernon Brumbaugh; Treasurer, James H. McNamara, Eagle Rock Lime Co.; Assistant Secretary, Roma F. Medford. In addition to Mr. Hammond, the executive committee consists of Henry La Liberte, Cutler-Magner Co.; Fred Witmer, Ohio Hydrate & Supply Co.; C. C. Schmoeller, Mississippi Lime Co., and Reed C. Bye, Warner Co. Directors from the various districts are as follows: 1—C. C. Loomis, New England Lime Co.; 2—H. D. Brigstocke, Thomasville Stone & Lime Co.; 3—Amos B. Miner, National Gypsum Co., Ralph L. Dickey, The Kelley Island Lime & Transport Co.; 4—J. A. Dunaway, Peery Lime Co., Inc.; 5-A—Wilfred W. Sprague, National Mortar & Supply Co., and Fred Witmer; 5-B—E. C. Powers, The Marble Cliff Quarries Co.; 6—Gordon W. Hughes, Inland Lime & Stone Co.; 7—C. C. Schmoeller; 8—C. E. Brady, Allwood Lime Co.; 9—Henry La Liberte; 10-11—K. L. Hammond; 12—Paul Sunderland, Ash Grove Lime & Portland Cement Co.; 13—Charles A. Mattiza, Jr., Pioneer Lime Co.

In Charge of Safety

H. D. GREENE has been placed in charge of the personnel and safety departments of the West Des Moines, Iowa plant of the Pennsylvania-Dixie Cement Corp., which has reopened and is operating at near capacity after a recent shutdown for repairs and improvements in preparation for the 1942 run.

Study Limestone Strata

A. F. GREAVES-WALKER, head of the Ceramics Engineering Department of North Carolina State College, has been retained by the North Carolina Highway and Public Works Commission to study possibilities of mining a limestone deposit in Yadkin county.

Directs Research

ALFONSE PECHUKAS has been named acting director of research of the Columbia Chemical Division, Pittsburgh Plate Glass Co., succeeding Dr. Irving E. Muskat, resigned. Dr. Pechukas has been with the company for the past five years.

Back From Panama

TOM M. PRICE, formerly on Third Locks Project, Panama Canal Zone, is now construction manager for Kaiser Co., Inc., Oakland, Calif., on the integrated steel plant at Fontana, Calif.

In Civil Air Patrol

WILEERT W. HAASE, new president of the National Concrete Burial Vault Association and head of American Vault Works, Inc., Forest Park, Ill., is now a member of the United States Civil Air Patrol.

In the Army

GEORGE C. BRANNER, state geologist of Arkansas for the past 19 years has been called to active duty as Lieutenant Colonel in the Quartermaster Corps, U. S. Army.

Gypsum Engineer

WELDELL E. BEARCE has been appointed plant engineer at the Bellefonte, Penn., lime plant of the National Gypsum Co. He was formerly with the Aroostock Trap Rock Co., Presque Isle, Me.

Joins U. S. Engineers

E. B. CAPE, formerly an engineer with the Asphalt Institute at Dallas, Texas, has resigned to join the U. S. Engineers in the Dallas District office.

New A.S.T.M. Officials

P. H. BATES, Chief, Clay and Silicate Products Division, National Bureau of Standards, Washington, D. C., has been elected vice-president of the American Society for Testing Materials, and ALEXANDER FOSTER, JR., vice-president, Warner Co., Philadelphia, Penn., has been elected a member of the executive committee.

P. H. Bates

In New Jobs

ROBERT T. CHAPMAN has left the Hercules Powder Co., Joliet, Ill., to join the staff of the United States Gypsum Co., Chicago, Ill.

WILLIAM G. PARSLOW has left the General Chemical Co. in Galax, Va., to become mining engineer for the National Gypsum Co., North Holston, Va.

JOHN S. SOUTHWORTH has joined the staff of the Southwestern Engineering Co. at Luning, Nev., where a large calcining plant is being constructed for Basic Magnesium, Inc.

EDGAR S. PHILLEO has changed positions from assistant mine engineer for the United States Gypsum Co., Oakfield, N. Y., to mine engineer for Pickands, Mather and Co., Biwabik, Minn.

JOHN B. PITTS, JR., has been engaged by the Mathieson Alkali Works at Saltville, Va., in the engineering department. He was plant engineer for the National Gypsum Co., North Holston, Va.

CHARLES V. HARRIS was advanced the first of March to division engineer in charge of the engineering department for the Tennessee Rock department, International Minerals and Chemical Corp.

LLOYD GEORGE PATTERSON has changed positions from furnace superintendent, lime kilns, American Cyanamid Co., Niagara Falls, Ont., to personnel director for the Welland Chemical Works, Ltd., also at Niagara Falls.

BENNETT R. BATES, mining engineer with the Dorr Co. in New York, is now connected with the minerals section of the Board of Economic Warfare in Washington. He expects to make a trip to South America soon.

WALTER BANK has resigned as junior scientific aid with the U. S. Geological Survey, to become junior chemist and petrographer with the U. S. Bureau of Mines at the Central Experiment Station, Pittsburgh, Penn.

ARTHUR BEYER has left the engineering department of the Universal Atlas Cement Co., New York City, to take up his duties as Ensign in the U. S. Naval Reserve where he has been assigned to the Ordnance Department.

HINTS AND HELPS

Mirror to Indicate Flow of Materials

OVERHEAD MIRRORS are used by a concrete pipe manufacturer in the South so that the power machine operator can look into the feed

Mirror (upper left) permits pipe machine operator to see interior of hopper feeding concrete into molds

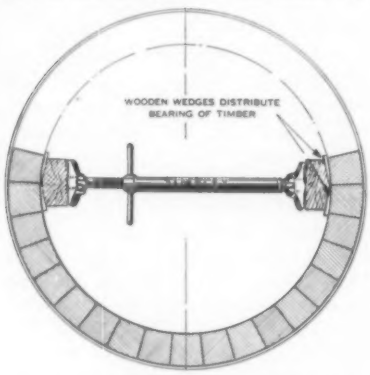
hopper without leaving his machine. The hopper is overhead and skip-fed from a concrete mixer on the floor level. The operator can start the skip hoist by a push-button whenever the hopper needs filling, while staying at his post.

Cooling Electric Motors

TO PROLONG THE LIFE of electric motors driving rotary kilns, an Eastern cement manufacturer installed an air-cooling system. Galvanized iron piping was run to each motor from a main duct connecting to a fan. Air is forced through the lines from the fan at the rate of 6000 c.f.m. (total) to play upon each of the four motors. They are 30-hp. G. E. induction gearmotors with Selsyn generators on their shafts to synchronize the rate of feed into each kiln.

Use of Jacks In Lining Kilns With Refractories

IN A RECENT ARTICLE in *Paper Industry & Paper World*, C. A. Brashares describes an efficient method of relining rotary kilns. While his description deals specifically with relining rotary kilns used for the recovery of lime from lime sludge created in the manufacture of paper, the problem is the same for lining kilns for



Showing method of jacking lining in rotary kiln during installation

the production of cement clinker or lime from limestone.

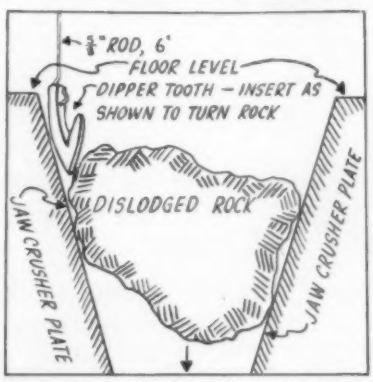
The method of lining consists of laying approximately 10-ft. of lining up to a point slightly above the kiln axis; next, of bracing the top liners on each side with heavy timbers, and then, of holding these timbers firmly against the brick with jacks or trench braces, as shown in the illustration. These timber braces or jacks are available with the pipe ready to use or the screws and ends can be had separately, the cement or lime kiln operator inserting his own pipe.

Following this step, the kiln is turned one-fourth revolution and additional refractory blocks are laid to a point slightly above the kiln axis and braced. The next quarter turn of the kiln brings the remainder of the lining into such position that keying of the final brick in each ring can be accomplished very conveniently.

Standard rotary kiln lining blocks are made to have a 9-in. outer chord and inner chord of the proper length to permit the liners to turn the circle of the kiln. However, it is necessary in almost all cases to cut the final block in order to obtain a tight ring. In no case should this final key be less than one-half of a full block. It is therefore best to cut two blocks when the space remaining in the ring for the final key is such that less than one-half of a full block is required.

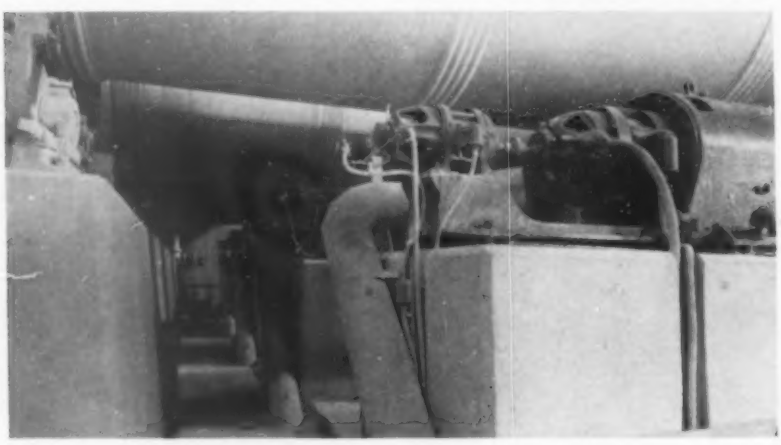
Dislodging Stone in Jaw Crusher

AT THE DOLCITO QUARRY CO. plant, Dolcito, Ala., old manganese dipper teeth are used at the primary crusher to dislodge stone that hangs up be-



Dipper tooth suspended by rod between crusher jaw and stone to dislodge it

tween the jaws of a 40- x 42-in. Allis-Chalmers jaw crusher. A tooth is hung from the end of a steel rod, long enough to allow the crusher attendant to hang the dipper tooth down between any rock that hangs up and one of the crusher jaws. By bridging the gap between the rock and part of the crusher jaw with the tooth,



Pipe ducts carry cooling air to electric motors driving kilns

contact is made and the movement of the jaw becomes effective in moving the rock. Thus, each short, quick movement of the jaw tends to turn and move the rock to a different position until it drops to where it will be crimped by the crusher.

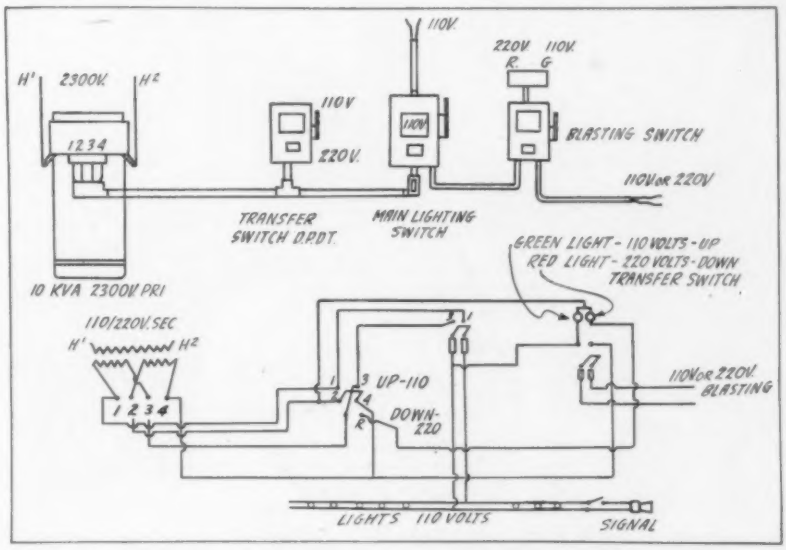
Electrical Connections For Blasting

By E. M. DIEHL

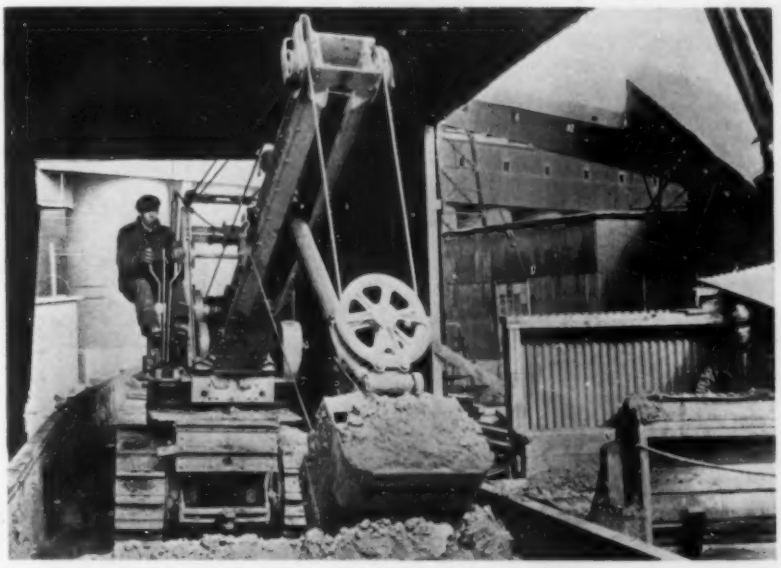
Ch. Elec., Keystone Portland Cement Co.

FOR THE ELECTRICIAN who is interested in a fool-proof, reliable and inexpensive system of electrical blasting connections, the wiring diagram shown in the sketch is offered. This system has been in use over two years, and has never failed to do its work. Our lighting at the quarry is all 110-volt, two-wire system fed from the 2300-volt, three-phase power line. As the distance from the blast to the switching point increased, it became necessary to supply higher voltage and continue to maintain the lighting signal and close-by blasting voltage at 110 volts.

By installing a two-pole, double-throw switch, as shown, either 110 or 220 volts may be used for blasting, and also a green light is displayed to warn the operator to throw over his transfer switch for 220 volts which in turn will darken the green and show a red light. There is no danger of opening the lighting circuit as throwing the switch simply changes one-half of the secondary winding in the transformer from multiple to series, providing a non-interfering signal light arrangement.



Wiring diagram for a blasting circuit, including a fool-proof warning system



Tractor shovel unloading open-end gondola cars to conveyor also moves car into position for receiving hopper

Unusual Use for Shovel

IN THE ACCOMPANYING ILLUSTRATION is shown how a specially mounted shovel both unloads the car and moves it at the same time. Although the equipment is in use in unloading copper concentrates at a mine in Canada, this labor-saving method may be readily applicable to operations in the rock products industry.

A specially built Link-Belt Speeder TS-40 tractor shovel was mounted on a 56-in. gauge D-6 Caterpillar tractor. Equipment includes a 12-ft. boom, 10-ft. dipper stick, and a ¼-cu. yd. bucket. It is narrow enough to be run up a ramp to one end of a string of open-end gondola cars to be unloaded. The shovel proceeds along the car floor and does all its digging entirely from within the car.

Cables anchor the shovel to a point near the conveyor belt, and as the machine eats its way into the car, the tractor treads are engaged to move the car under the tractor in the opposite direction as the unloading progresses, eliminating need for a switching engine. The shovel delivers the material into a receiving hopper feeding a short cross conveyor.

Study Air-Blasts Caused by Detonation of Explosives

SENSITIVE INSTRUMENTS developed by the Bureau of Mines to measure the destructive force of air-blasts caused by the detonation of high explosives in mines and quarries are also applicable to the wartime problem of damage from demolition bombs and other military explosives, according to Dr. R. R. Sayers, Director of the Bureau. The latest method of measuring detonating forces originated and tested by the Bureau is a dual channel high-speed cathode ray recording system which, with its delicate instruments, can measure time increments as low as 20 millionths of a second, and can obtain written records at 15,000 inches per second of a blast's advance. A bulletin, No. 3622, "Damage from Air-Blast," by S. L. Windes, will soon be published by the Bureau of Mines, Department of Interior, Washington, D. C.

REHABILITATION

Lehigh Returns to the Dry Process

General view of plant from top of silos. To the left is the long enclosed conveyor from quarry crushing plant. Just to the right of stack may be seen rounded roof of raw materials storage

By BROR NORDBERG

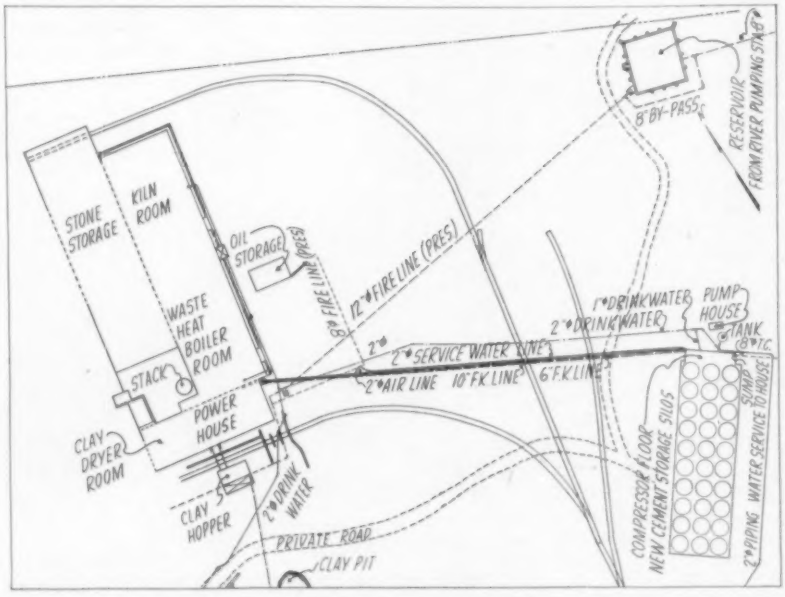
Part 1. Completely rebuilt and equipped Alsen, N. Y. plant has established some excellent production cost records. First article deals with Calcination

IN REBUILDING the Alsen, N. Y., plant, the Lehigh Portland Cement Co. converted it from wet to dry process and installed an efficient waste heat power plant. Before 1925, when the Hudson Valley Portland Cement Co. had the mill, it had been converted from a dry plant, so it is now back to its original type.

Capacity of the new plant remains about the same, 2800 bbl. a day, from four 7-ft. 6-in. by 122-ft. rotary kilns. However, seven kilns were required for this production when it was operated under former conditions. Production costs have been markedly reduced, with improved design and new machinery throughout, and excess generated power is being sold to the local power company. Until October, 1927, when the old mill was shut down, a coal-fired steam-generator plant developed two-thirds of the needed power and the rest was purchased. The Alsen plant has a design somewhat similar to the Union Bridge, Maryland, mill (ROCK PRODUCTS, August, 1941, pp. 46-56). It differs in equipment, in some departments, and in certain operating details. Standard portland cement (type I), moderate heat of hardening cement (type II) and Merriman specification cement for the New York Board of Water Supply are the products manufactured.

Quarrying, blending, grinding, sampling and storage will be discussed in detail in an early issue of ROCK PRODUCTS. It suffices for the purpose of introduction to the accompanying article on "Calcination" to mention briefly what the raw material processing consists of.

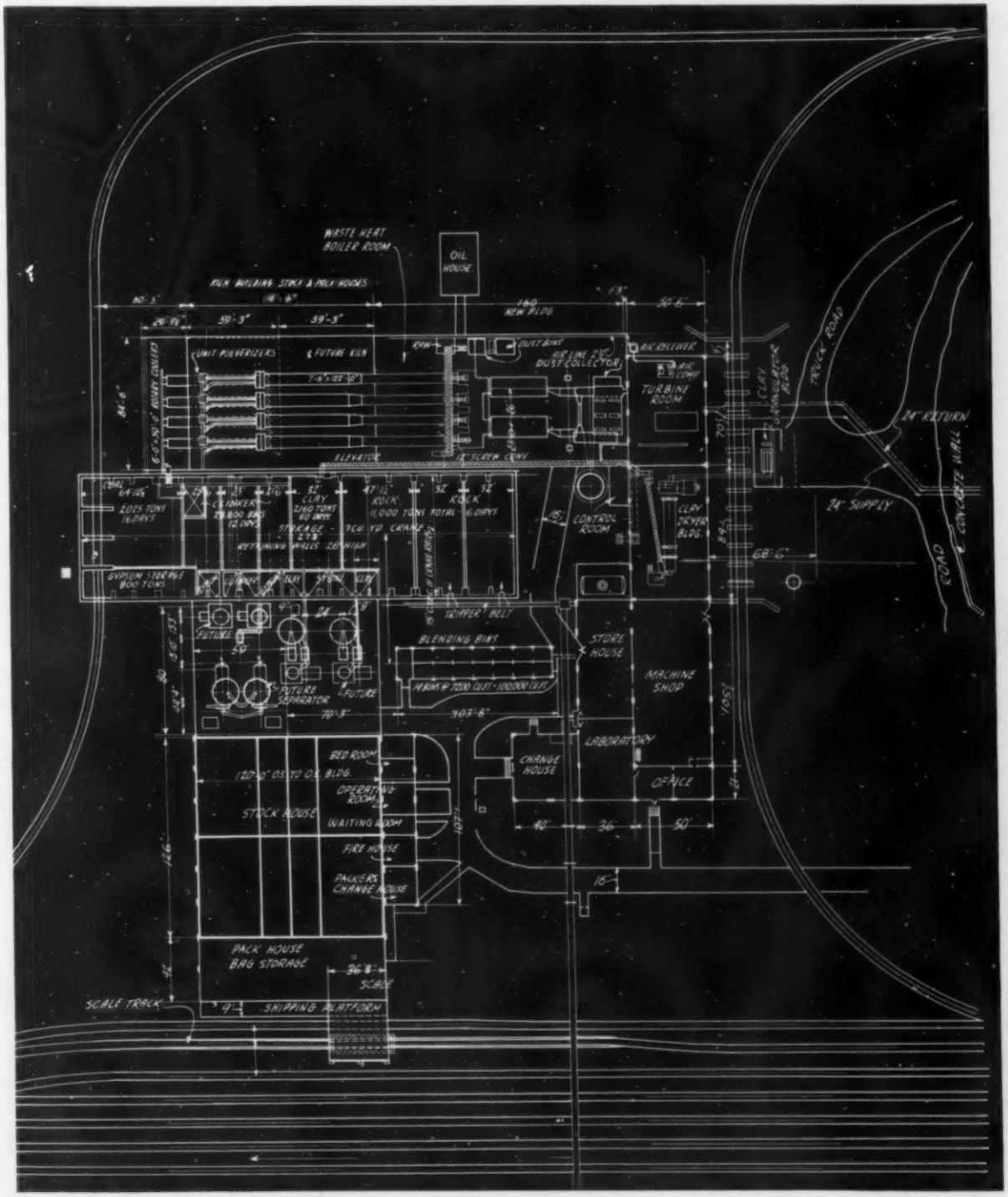
Due to variations in the rock, selective quarrying is necessary, preliminary to blending. Three types of crushed and graded stone that differ chemically are stored separately. Certain percentages of each kind of stone are put into a grinding mill feed hopper by an overhead crane,



Layout of cement mill buildings with relation to cement storage silos, clay pit, and pipe for water and cement

with clay in a second hopper, for proportioning by automatic scales to the grinding mill.

With circulating loads as high as 1000 percent, a No. 366 B & W pulverizer in combination with a mechanical air separator grinds the raw material into kiln feed fineness. Drying is done during the process of grinding. A system of double-blending, with 14 blending tanks, is used for correcting the raw mix composition and an 8-in. F-K pump delivers the blend into either of two kiln feed bins.

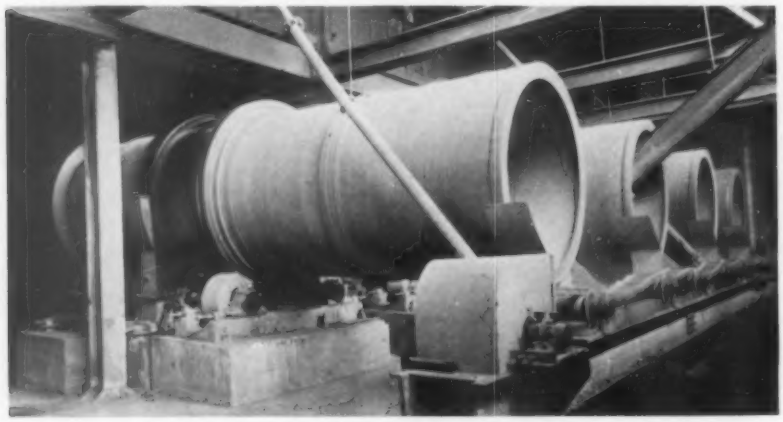


General plan of Lehigh's rehabilitated Alsen, N. Y. plant. Four dry process kilns produce a total of 2800 bbl. a day. Space is provided for a fifth kiln. A modern waste-heat power plant generates electric power in excess of plant requirements with all four kilns operating

Waste Heat Plant Produces Excess Power

CLINKER PRODUCTION at Alsen, N. Y., is rated at 1,000,000 bbl. annually from four 7-ft. 6-in. by 122-ft. kilns.

The waste heat power plant is outstanding, but the kilns are being operated primarily as kilns and not for their ability to help generate power. Combustion conditions are kept as near to perfect theoretical operation as possible. The changeover from wet to dry feed and the installation of modern firing equipment with instrumental controls over all the kiln operations has very materially improved the fuel economy.



Rotary, water-spray clinker coolers (four) below kilns, discharging to drag chain and thence to elevator into covered storage

Feeding the Kilns

The problem of feeding the kilns dry materials uniformly, one of the "headaches" of most operating men, has been solved by a system of circulating the feed material.

At each side of the kiln building is a kiln feed bin, out of which material feeds into a short enclosed screw conveyor. These two conveyors are driven by variable speed d.c. motors, and feed into enclosed bucket elevators. Each elevator transfers its load to its own enclosed screw conveyor, 71-ft. centers, that spans the building over the tops of the four kilns to the feed bin on the opposite side. Material travels from one side toward the opposite feed bin. Similarly, material from the second bin is carried by a parallel screw conveyor in the reverse direction back toward the first bin.

Directly underneath the two conveyors, four 10-in. variable speed feed screws, 10-ft. long, discharge to the kiln feed spouts, horizontally and at right angles to the two cross conveyors. Slide gates in the housing around the two main screw conveyors permit material to drop into each of the feed screws.

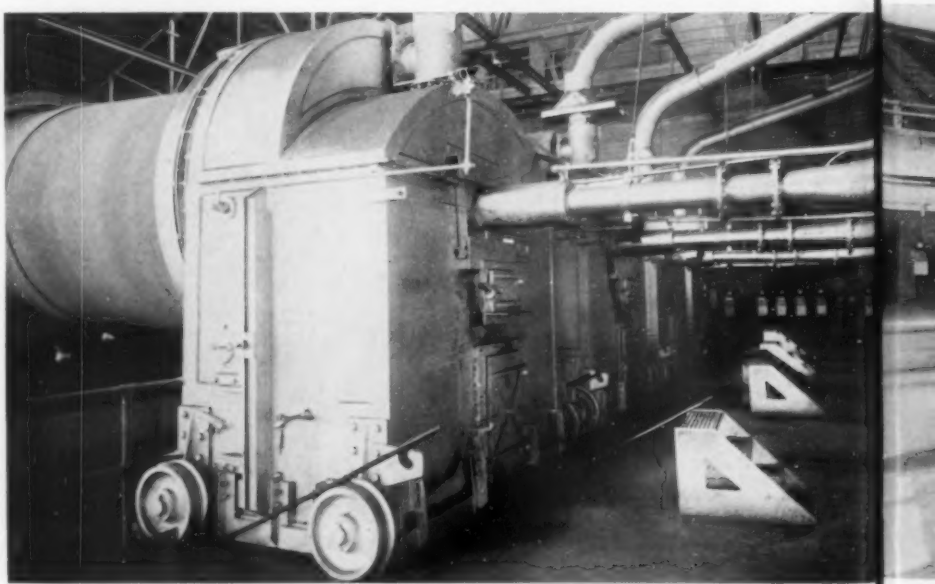
This feed arrangement is designed to provide a constantly uniform rate of feed by keeping the screw conveyors fully and uniformly loaded. Each feed screw will fill up by gravity from the first cross screw conveyor or, if it does not, the remainder will drop into it from the second screw conveyor. The long conveyors always carry sufficient material for the requirements of the four kilns and any carryover drops into the feed bin on the far side of the building. With this system of kiln feed, the difficulties of arching and flooding common to overhead feed bins where a head of fine material is built up is eliminated.

Each of the four kilns is driven by a 30-hp. induction gearmotor, with a Selsyn generator on the kiln motor shaft which automatically regulates the kiln feeder motors so that there is always a constant number of feeder revolutions to each kiln revolution. The kilns can be turned at eleven different speeds and are normally driven at 60 to 70 r.p.h. Each kiln motor is air-cooled.

Firing the Kilns

Each kiln, which is fired by an E-24 B & W unit coal pulverizer, discharges its clinker through a 7- x 59-ft. water-sprayed rotary cooler. The coal burned is a 13,000 B.t.u. West Vir-

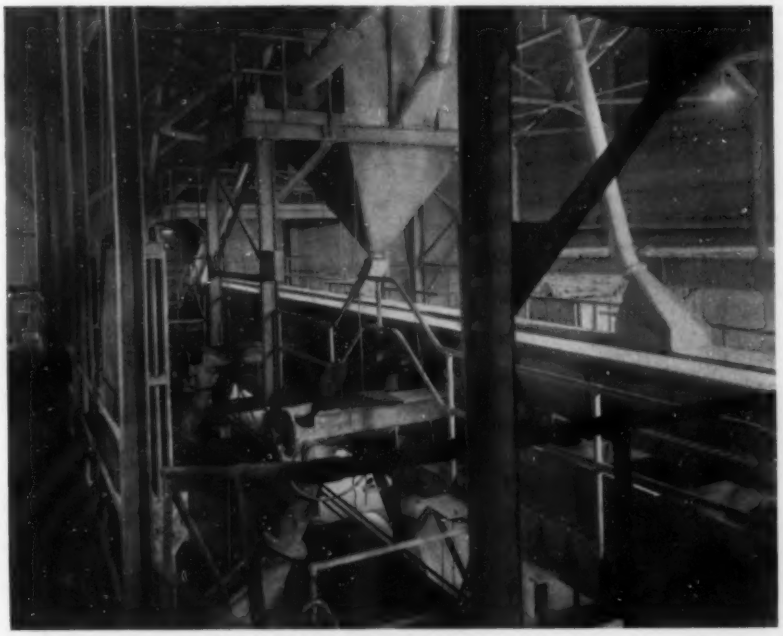
View of four kiln hoods, showing drawoff pipes for heated primary air on top and water-cooled burner pipes. Note electric "eyes" focusing through peep holes inside kilns



ginia slack of ¾-in. top size. It is handled into the individual coal mill feed bins from a storage hopper in the main storage building by a belt conveyor with a magnetic pulley to remove tramp iron, followed by a bucket elevator and an overhead drag conveyor.

Kilns are fired under induced draft, the four exhausting into a common flue where the hot gases are split into two waste heat boilers. Each boiler is served by a draft fan. Both the primary air, for operation of the unit coal mills, and the secondary air, come from the same source. It is the air heated in the rotary clinker coolers.

Each kiln hood has an internal baffle arrangement so that hot air coming up from its cooler surges up around the burner pipe and into the kiln. Clinker drops into the cooler on the other side of the partition. Primary air for drying the coal while it is being ground is taken from the heated air stream coming up into the kiln hood. If for any reason no heated air is available from a cooler, primary air is available from the kiln hood combustion zone.



View above kilns showing feed arrangement. Each long screw conveyor on right carries feed material continuously in opposite direction. Short horizontal screws take material from either one of the longer screws, enough to keep their barrels full when dropping the material into kiln feed spouts. Dust collector may seen in the center

Secondary air enters the kiln hood at 1200 to 1500 deg. F. and the air withdrawn from the stream into the grinding mills is tempered to 340 deg. F. When the coal is injected into the kilns, the primary air-coal temperature is 200 deg. F. Clinker is cooled down to about room temperature as it drops out of the four coolers on to a common drag conveyor, and is elevated directly into storage. The same overhead crane that handles raw materials fills clinker and gypsum into a pair of feed hoppers serving the finish grinding mill. Each kiln hood has an emergency door through which the clinker can be by-passed into an auxiliary reversible 55-ft. drag conveyor to divert it into one of the other coolers. If any cooler is down for emergency repairs, it is a means of keeping the kiln going.

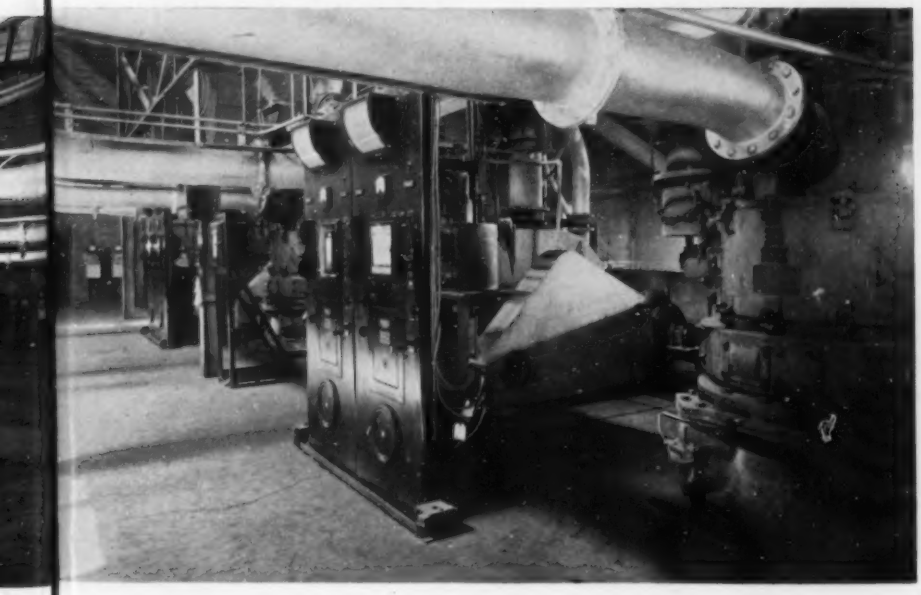
Each cooler is driven by a 20-hp. electric gearmotor and each unit coal mill is driven by a 60-hp. induction motor. The coal-handling equipment is served by a bag-type dust arrestor, and clinker dust from the primary air stream, trapped in cyclones ahead of the unit mills, is dropped through a spout on to the clinker drag conveyor.

Each kiln has a water-jacketed burner pipe. The kilns are lined, first with 4-ft. 6-in. of 70 percent alumina brick, followed in order by 20-ft. of magnesite brick, 10- to 15-ft. of high alumina lining and then with a cheaper grade of brick for the remainder of their length.

Kiln speed is the only variable that is adjusted to compensate for changes, all other factors of combustion being held constant. Kiln speeds are changed automatically.

Each kiln is equipped with a G.E. vacuum tube temperature recorder which also controls the speed of the kiln. The phototube pyrometer is focused through a peep-hole in the kiln hood on the clinker as it emerges from contact with the flame and the temperatures are automatically and

Row of direct-firing coal mills with control instruments. Feed hoppers are directly overhead



Steam turbine-generator unit producing electric power from waste heat. In the right background is a "Deaerator" and below (not shown) is the surface condenser

continuously recorded on the instrument panel-board. Recording of the kiln temperatures is a check on, and a guide for, the burner. Kiln speeds and flue gas temperatures are also continuously recorded.

Secondary air flow is controlled by an automatic draft controller, and dampers at the induced draft fans are the means of holding constant draft conditions at the back ends of the kilns. Gas analyses are taken manually at regular intervals.

Waste Heat

Electric power considerably in excess of plant requirements is developed by the waste heat plant, with all four kilns operating, and the surplus power is sold as such. Clinker grinding mill capacity is in excess of kiln capacity which, of course, permits the staggering of operations to hold down the peak power load. With three-kiln operation the plant is self-sufficient in power and the entire mill has been operated with only one of the two waste heat boilers in service. Power is being developed with a consumption of 10 to 10.5 lb. of steam at 400 p.s.i. per kilowatt.

Kiln gases are drawn by the induced draft fans through the four kilns into a common flue, where they are split equally through two steam boilers, each with an economizer. The boilers are 3-drum waste heat B & W Stirling, each with 9750 sq. ft. of heating surface, designed for 450 p.s.i. pressure. Each has an outlet to a 5-loop superheater. Economizers are designed for 500 p.s.i. and have 5300 sq. ft. of heating surface.

Kiln gases enter the boilers at 1400 deg. F. and exhaust from the economizers through an electric precipitator, 2-unit stack dust collector at from 300 to 400 deg. F. The precipitator handles 81,500 c.f.m. of gases, of which 70,000 c.f.m. is from the four kilns at 400 deg. F. or less and 11,500 c.f.m. from the clay dryer at 220 deg. F.

Electric power is developed by a 3000 k.w., 80 percent P. F. Curtis turbine-generator set driven at 3600 r.p.m. by steam at 400 p.s.i. Electricity is generated at 2300 volts, alternating current. Steam is consumed at the rate of 20,000 lb. per hour at about 735 deg. F.

Spent steam from the turbine enters a surface condenser, followed by a deaerator to remove CO_2 and O_2 gases, and is pumped back into the boilers by a boiler feed pump. Make-up feed water is put through an evaporator, where lime is removed, and is then condensed and passed through the deaerator before being pumped into the boiler.

Stack dust dropping into the precipitator dust hoppers is discharged, with the help of electric vibrators on the hoppers, into sealed screw conveyors set in the floor. This dust and other dust similarly handled from the waste heat boiler hoppers is elevated into either of two dust bins. One has an inclined screw under it which loads dust into trucks for disposal. From the other bin, dust can be withdrawn to blend into fresh raw material as it is conveyed to the kiln feeders. So far, none of the dust has been reclaimed for kiln feed.

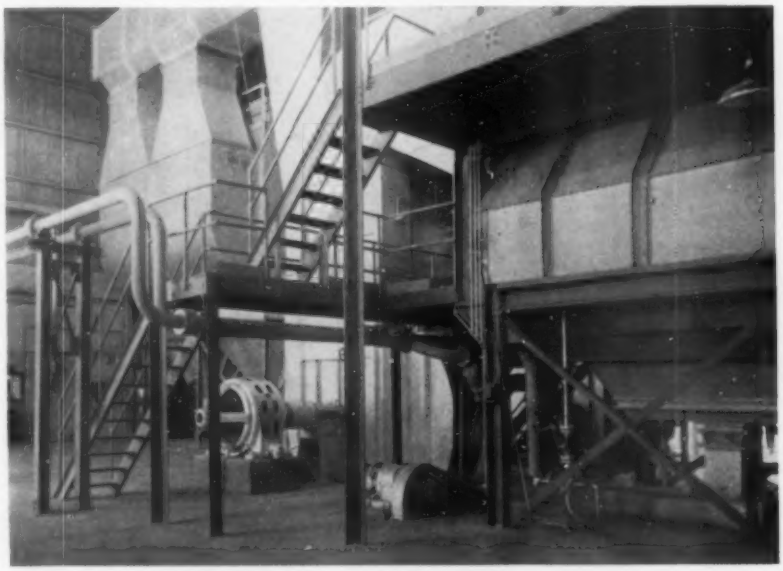
(To be continued)

Quarry Scrap to Smash Japs

MORE THAN 1000 TONS of scrap metals have been reclaimed from abandoned Kelley Island Lime and Transport Co. quarries on Kelley Island near Sandusky, Ohio.

New Pipe Plant

UNIVERSAL CONCRETE PIPE CORPORATION, Columbus, Ohio, has announced that it will build a $40,000 plant near Henderson, Ky. An option for a 10-year lease has been taken on the property. The plant will turn out pipe for a big army job.



Left to right, may be seen the electric dust precipitator, induced draft fan back of large motor, and the waste heat boiler

Drilling On A 45-Degree Slope

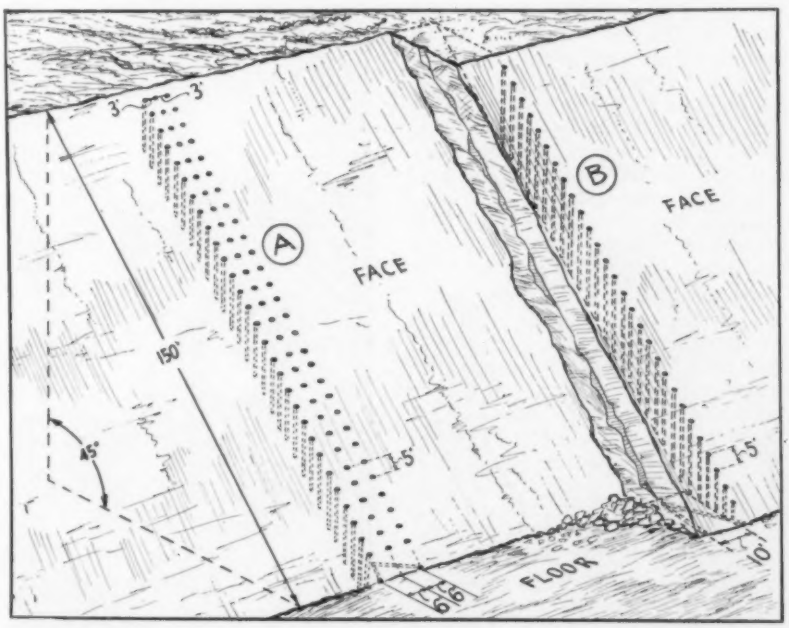
Air-operated wagon drills held in drilling position by cable and pneumatic hoist. Ten tons of stone brought down per pound of dynamite

By BROR NORDBERG

Galen Detwiler, superintendent, left, and G. E. Miller, quarry foreman, standing alongside wagon drill equipped with hoist

SELECTIVE QUARRYING of two or more types of limestone in a single quarry might often help expand markets for crushed stone or be the means of preserving those that exist. An inventory taken of the stone compositions in different ledges or remote parts of many quarries would show chemical differences that mean much to the consumer.

New Enterprise Stone and Lime Co., New Enterprise, Penn., governs its drilling and blasting operations at Ashcom, Penn., according to chemical analysis and has developed an unusual quarry operation. The formation is out-of-the-ordinary but the operating principles could be applied, with modification, in any quarry. Major markets include commercial crushed stone, flux stone and agricultural limestone. Lime is also produced. Certain strata contains too much silica for fluxing purposes and more than is desired in burning lime. They are satisfactory for the other purposes, but other strata must be worked separately.



Diagrammatic sketch to show how 45 deg. angle ledges are drilled for blasting. (A) shows the drilling pattern to open one or more new ledges, depending upon rock analysis. There are three rows of holes, the outer two converging toward the middle row near the top. Dotted lines indicate vertical drilling (shown only for one row) with snake holes at the quarry floor. (B) shows drilling arrangement (through two successive strata) for slicing off benches from a ledge already opened and overlaying the ledge under (A)

Chemical and Physical Composition of Rock

Ashcom is in Bedford county, three miles from Everett, at a location where stone was quarried years ago to supply flux for iron furnaces. The limestone here is of the Cambro-Ordovician geologic period. It might be called a magnesium limestone, although some of it is high calcium. Upheaval in the earth's crust in ages past has left the rock strata standing at a 45 deg. angle and out-cropping on the surface. The stone is described by geologists as being dark blue to black in color, massive and knotty. It weathers to a bluish grey. Calcite veins are common on the jointing planes, which run 4- and 6-ft. thick, and there is evidence of considerable slipping along the bedding planes. The beds strike N 35 deg. E and dip E 45 deg.

Until the Pennsylvania Turnpike was completed in 1941, the fact that some of the beds contain 5 or 6 percent silica and others less than 3 percent made no difference. The plant was not producing flux stone until then and practically all the stone was sold as aggregate, with

Stone being hand-loaded in this part of the quarry is for lime burning. Note rock strata on a 45 deg. angle

smaller quantities burned into lime. Selection of the low silica stone for flux was unnecessary and all the stone was shot down together. Blasting involved well drill holes about 100 ft. deep to the quarry floor.

Although selective quarrying was unnecessary until recently, well drilling had its disadvantages. Holes had to be started as near to the face as the drill could be placed. Even then, the burden at the quarry floor would build up to about 60 ft. Snake holes had to be driven about 30 ft. into the rock at the floor level to help dislodge the toes. In blasting, the rock would pile up high, which inconvenienced loading of the stone into cars. A shot would bring down four tons to a pound of dynamite.

Change Drilling and Blasting Practices

Well drill shooting in this rock formation would prohibit selection, since the different types of rock lay in 45 deg. beds. The solution is to separate the beds from each other, and the present pattern of drilling and blasting to accomplish this came about in furnishing stone for construction of the Pennsylvania Turnpike. Two well drills were insufficient and an Ingersoll-Rand FM-2 wagon drill supplied air from an Ingersoll-Rand model 40 air-cooled compressor was purchased to supplement the bigger drills. This drill is mounted on a rubber-tired carriage which has an air-driven cable I-R hoist to spot the drill at any point on the sloping face. The cable is anchored at the top of the face. Well drills are no longer used.

Overburden averages 10 ft., and the clay pockets which usually fill the crevices in formations of this kind must be cleaned out. Most of the overburden is stripped with an International tractor pulling a 4½-cu. yd. Bucyrus-Erie scraper. A Caterpillar D8 tractor and 12-cu. yd. LeTourneau Carryall scraper do the same work at Ashcom and other plants of the company. A pull shovel boom, or back hoe, is attached to a ¾-cu. yd. Northwest gasoline shovel to scoop the overburden out of the deep pockets.

Chemical tests are made from samples out of each tilting bed of stone, as a guide to drilling and blasting. Alternate beds might be the only ones with low silica content or several beds in order might turn out to be suitable for flux stone. After stripping back, samples are taken from each outcropping bed by drilling into it with a jackhammer and pop-shooting enough rock for a good sample. Samples are sent to the Pittsburgh Testing Laboratory for analysis.

Usually these analyses permit drilling several strata together, totaling 12- or 18- or 24-ft. There is no foreign material between the layers and, in drilling, the holes are driven exactly to a bedding plane. In blasting, a clean break is made and a smooth surface left on the next lower rock bed. Drill holes are driven almost vertically, which means drilling about 18 ft. to go through 12 ft. of thickness of rock bed. Once a bench is opened into a layer, or several layers, the drillers can measure the face by a rope to determine how far down to go. Differences in the shade of the dust brought up by the drill guide them in opening a new working ledge.

Drilling and blasting the various ledges, or benches, after they have been opened up is very similar to ordinary bench drilling. The only difference is that the rock is on a 45 deg. angle and the holes must be drilled to a definite parting plane. Opening a new ledge involves opening a wedge to expose a face on either side of the initial shot. To do this a row of holes is drilled from the quarry floor straight up to the top, spaced on 5-ft. centers. Then

Above: Showing present methods of drilling. Wagon drill on a 45 deg. slope is held in place by a hoist. Below: Close-up of drill in action

two rows of holes are driven on both sides of the first row, starting 6 ft. on each side of the bottom hole in the first row. They are spaced 5 ft. apart, in each row, and the two rows converge toward the top of the quarry where they are 3 ft. on each side of the top hole driven in the first row.

These holes are loaded and shot simultaneously. When the rock brought down is cleaned up, a row of holes is driven, from bottom to top, on each side of the opening and the benches are shot down to make a straight face, up and down, on both sides. From here on, rock is sliced off in benches, with hole spacings 5 or 6 ft. apart vertically and a 10-ft. burden. In some parts of the quarry, which has about 1000 ft. of exposed face, as many as eight ledges are being quarried in this way.

Blasting Procedure

All the drill holes finish off at 2-in. diameter to accommodate 1½-in. dynamite sticks. Using Timken detachable bits, about 360 ft. or 24-ft. holes are driven in 10 hr. Three makes of dynamite, duPont, Hercules and American Cyanamid are used, of the semi-gelatin type. Drill holes are filled with dynamite a little more than half of their lengths. Screenings are packed in above the dynamite sticks with loose screenings to fill the rest of the holes. Two-thirds of the dynamite, at the bottom, is 60 percent dynamite and the other one-third 40 percent strength. All the holes for a shot are wired in series and duPont duplex electric blasting caps are connected to a 220-volt electric line. All are detonated simultaneously when a switch is thrown.

Gas shovel loading truck for haulage to the plant. Note breakage of rock which has slipped to the bottom

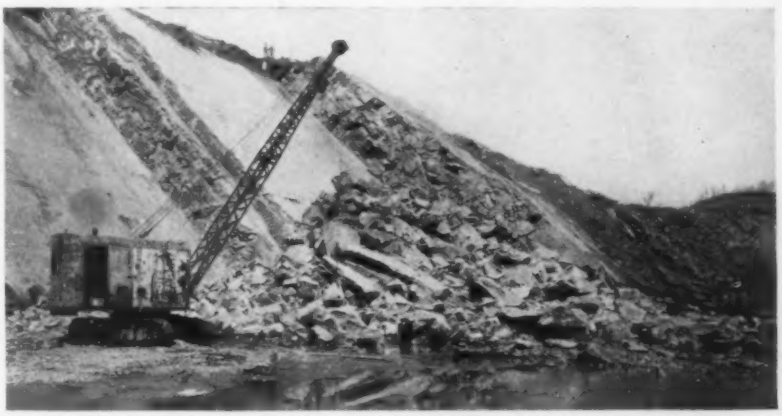
Accurate records are not kept of all the shots made but the average estimated yield for a bench shot is ten tons of stone brought down per pound of dynamite. Each of these blasts averages 3000 to 4000 tons. In opening a new ledge, from 2000 to 3000 tons are blasted down by the initial shot.

Ten tons of stone to a lb. of dynamite is much higher than is commonly realized in a limestone quarry. The steep angle and sharp break at the bedding planes, leaving a smooth surface for the rock to slide down and crumble, are responsible for much of the high yield.

All the rock, in any blast, slides down on to the quarry floor so there is no difficulty in segregating the different rock. There is no secondary drilling. A 3800 lb. Frog, Switch and Manufacturing Co. manganese steel ball is dropped about 25 ft. from the end of a 35-ft. boom on a Byers crane to break the big blocks of stone down to 6- or 7-in.

Stone for lime burning is hand-loaded into cars on 36-in. gauge track which are hauled to the lime plant. Other stone is loaded into two International trucks by a ¾-cu. yd. Northwest gasoline shovel and a second 1½-cu. yd. Northwest powered by a Murphy Diesel engine. The trucks transfer the stone at a ramp, into 3-ton Easton side-dump cars which are hauled in five or six-car trains by a 4-ton Vulcan locomotive to the crushing plant. Capacity of the crushing plant is 100 tons per hour.

Galen Detwiler is superintendent of the plant, G. E. Miller is quarry foreman and David Koontz is in charge of the blasting. J. S. Detwiler heads the company. Paul J. Detwiler is secretary-treasurer. Dale W. Detwiler and Emmert I. Detwiler also are partners.



Heavy manganese ball dropped by means of cable from shovel boom breaks larger pieces of rock

Warn Children Not to Play With Blasting Caps

INSTITUTE OF MAKERS OF EXPLOSIVES, New York, N. Y., has started its annual campaign to prevent accidents to children from playing with blasting caps. This campaign has proved its worth through the steady decline of such accidents among children from a total of 500 in 1926 to 132 in 1941, but the Institute would like to eliminate all of them. All users of explosives are being asked to cooperate in this movement. A special effort should be made to see that these caps are not carelessly mislaid by workmen so that children can obtain them.

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PENNSYLVANIA GLASS SAND COMPANY'S employes have signed the "Pledge for Victory" and are buying U. S. Savings Bonds systematically by allotments from their pay checks.

Radiating Conveyor System Speeds Storage and Shipping

Highland Sand and Gravel Co., Inc., uses a selective method of excavation to fit market demands for sand and gravel

Arthur C. West, treasurer and general manager, left, and Thomas Macormick, superintendent

STOCKPILING and loading out of sand and gravel do not follow standard procedure at the new plant of the Highland Sand and Gravel Co., Inc., W. Roxbury, Mass. There are no storage bins or tunnel conveyors underneath stockpiles for reclaiming materials for shipment at the new Dedham plant of this company, just south of Boston. Three grades of gravel, and two of sand, are stockpiled by inclined belt conveyors radiating from a central screening plant, as a continuous process without surge bins or any intermediate storage. Portable loading machines and a power crane load out the material into trucks.

This system of stockpiling and handling was adopted to conserve on the total height of plant, and it was calculated the intelligent operation of loading machines from open stockpiles would effectively minimize segregation. Drainage of the gravel, as well as the sand, was desired in serving certain important customers.

Selective Excavation

The new plant, which replaces an operation at Newton, Mass., discontinued in May, 1941, has a capacity of 180 tons per hour, including a brick sand and concrete sand. Its location is on swampy land and the deposit is glacial and spotty in the proportions of gravel to sand. For that reason, it is necessary to select the points of excavation, to fit the market requirements. Sand, or gravel, can be made to predominate in tonnage and sand with 15 percent through 50-mesh and 5 percent minus the 100 can be produced in ordinary settling tanks.

Excavation is done by a 1¼-cu. yd. Lorain 75 gasoline shovel, and haulage out of the pit is on contract. Five-ton loads are dumped into a field hopper, where boulders over 12 in. are rejected by a rail grizzley. A 30-in. Link-Belt reciprocating feeder regulates the flow out to a 30-in. belt conveyor which transports the pit run to the primary jaw crusher.

Two-Stage Crushing

A Telsmith rotary grizzley over this crusher, a 13- x 26-in. Farrell swing jaw, by-passes minus 2½-in. material

Feed hopper for pit run in right foreground with conveyor belt to primary jaw crusher. Cross belt goes to screening plant and radiating belts to stockpile finished materials

to join the large gravel, which is crushed, on a 24-in. belt conveyor for delivery to the screening plant. Oversize gravel is scalped, for further crushing, over a 4- x 8-ft. Niagara double-deck vibrating screen, with 1½- and 1-in. square openings on its two decks, top and bottom.

Plus 1½-in. gravel must be crushed down further in size, and is chuted into a surge bin over two crushers. If production is heavy in gravel, the reduction is accomplished through a 6-in. McCully fine reduction crusher driven by a 50-hp. motor through V-belt. If sand predominates, a bin gate is opened into an Allis-Chalmers 322 type R reduction crusher installed particularly for reduction to the ¼- to ¾-in. size range. Gravel from 1- to 1½-in. from the scalper is either put in stock over a belt conveyor, or into the bin feeding the type R crusher for the production of small size gravel.

A 25-hp. motor is V-belted to this crusher and actually consumes about 20-hp. in producing approximately 25 tons per hour of gravel, all passing 1-in., from a feed of 1½- to 3-in. gravel. Slightly more tonnage is realized with a feed of 1- to 1½-in. and a reduction to less than ¾-in. Both crushers have outlets to a 16-in. belt conveyor which returns the crusher product to the main belt feeding the scalping screen, to complete a circuit.

Gravel is sized over two 3- x 6-ft. double-deck Niagara vibrating screens, finished sizes being conveyed direct into stockpiles and the fines plus wash water enter the sand classifiers. On the lower screen deck, which determines the top size feed to the sand classifiers and the size of the pea gravel produced, Harristeel wobbly weave wire cloth, with 1-in. elongations, is used to prevent screen blinding.

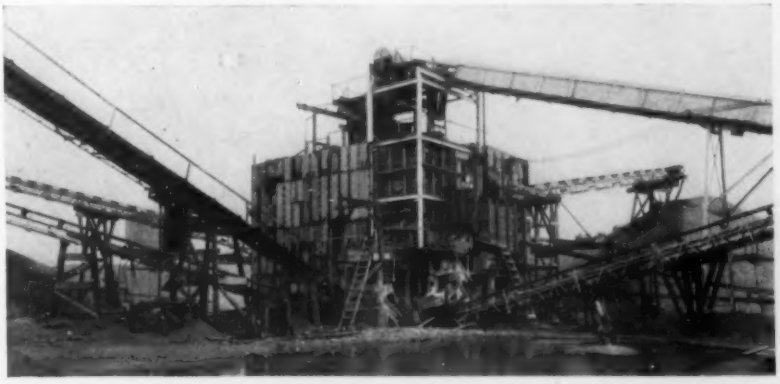
Sand Classification

Sand is produced in three No. 8 Telsmith automatic discharge sand tanks, two of which make concrete sand and the other brick sand or concrete sand. The two products are each dewatered in a Telsmith 16-in. twin-screw washer for direct transfer over belt conveyors into storage. Sand production averages 100 tons per hour and the product is well up in fines. About 1000 g.p.m. of water goes through the classifiers. For cold weather protection, all the screening and sand equipment are enclosed.

Five products are regularly produced and stockpiled. They are 1- to

(Continued on page 49)

Belt conveyors which stock two types of sand. Three other conveyors stock gravel sizes. One of the loaders to load trucks may be seen between the two stockpiles



Close-up of the screening plant, showing belt conveyors to the various stockpiles. Upper right may be seen incoming conveyor from primary jaw crusher, reduction crushers are at the lower right-hand corner of plant with discharge to belt to close circuit with incoming feed belt

Oversize from scalping screen goes into surge bin just over the two crushers. Belt conveyor feeds back to main belt to complete circuit with screens

CONVEYORS

Practical Operation Conveyor Belts

PART 3—Center maintenance responsibility on single man. Proper method of making belt joints; reducing chute wear

By MELVIN C. DOW* and HARVEY A. HARNDEN†

IN CONSIDERING the operation of belt conveyors we have discussed various factors affecting their costs. With these factors in mind let us discuss the duties of the operator in maintenance of conveyors in both routine and special repair work.

The necessity of placing full responsibility for the routine maintenance in the hands of one foreman or one millman is of first importance. Any division of such responsibility may result in neglect and possibly a costly accident. This includes regular lubrication of all bearings in idlers and pulleys, reducers and motors; regular cleaning around the conveyors and walkways, the removal of dust from under idlers and pulleys, the proper maintenance of lighting and just good housekeeping. Also included is the adjustments in bearings, take-ups, and the training of the belts.

Repairing Belts

When special repair work is required it is usually necessary to do the work promptly and any delay will not only increase the cost of the repair but shorten the life of the belt. Joints require special attention and, under certain conditions with abrasive material, frequent replacement. In such a case it is well to investigate the economy of having the belt made endless by vulcanizing on the job. Even the best belt fasteners wear out rapidly except in new belts with thick covers where they can be pulled in below the surface of the belt. With a new sound belt new fasteners may be placed in the old holes when they are worn thin but as the belt grows older this can not be done as the belt tears at the fasteners or when they are being removed. Then it is necessary to cut off the belt and make an entirely new joint. This loss of belt then becomes an important item in belt repair costs. It might be interesting to note that in one belt, over several years operation, this loss amounted to about one percent of its total length per year. It should be considered in the comparison of costs of patented fastener joints and vulcanized joints.

One difficulty with the bolted fastener joint is that it affords an entrance point for moisture and dust at the bolt holes and at the cut end. This may be remedied to some extent by sealing these holes and cut ends with ordinary rubber patching cement. A molded rubber sealing strip is also made for the purpose of protecting the cut ends of the belt. A few broken fasteners, if neglected, may rip a belt lengthwise due to concentrated stresses. Joint and lacing trouble can be largely eliminated by vulcanizing. Except for the consideration of the first cost of the heating equipment and tools this method of joining and patching belts would be extensively used. In a large plant this investment is warranted, while in a small one it is not. This equipment may be rented in some places.

Reducing Wear on Chutes

Cuts and tears in belt covers permit the entrance of grit, dust, and moisture into the carcass, and, while causing little apparent further damage to the cover, may result in serious deterioration beneath it. Repairs of such injuries may be made either hot or cold. If the vulcanizer for joints is not on hand a smaller one for this purpose is recommended. However, in the absence of either, a fairly serviceable job may be made with ordinary tire repair gum and cold patch cement available at tire repair shops. For large patches and more permanent repairs the hot process should be used with the rubber cured in place. New pieces of fabric may be cured in under the rubber when required, as it is in making vulcanized joints. Belts ripped or sliced all the way through may be repaired with metal fasteners. In this case it is advisable to seal the cut edges with cold patch cement.

Chutes frequently require repairs. In extreme cases they may be battered or worn so greatly that extensive repairs are necessary. This is usually merely a matter of replacement of wearing surfaces, or the installation of wearing surfaces not applied in the original design. These are usually hard metals such as manganese steel, spring steel, or wear resistant alloy steels sold under various manufacturers' brand names. In the case of wet materials liners may be rubber. The manganese steel is used in chutes where heavy impact occurs such as in the discharge chutes of large crushers. They are cast to shape and usually are ¾-in. or more in thickness. Except in cases of heavy impact this expense is not warranted. Spring steel, known as S.A.E. 1095, is a very convenient material to use for the average aggregate plant. This is made in various widths and thicknesses. For chute work 4-in., 5-in., and 6-in. width and ¼-in. or ½-in. thicknesses are used. These are attached to the inner surfaces of chutes with ordinary countersunk head machine bolts, ½-in. or ⅝-in. in diameter. The operator may find the designer of his chutes has arranged these strips so that they may be reversed end for end to obtain additional life in cases of uneven distribution of wear. They should always be arranged so that any one strip may be removed without the necessity of removing others. Spring steel cut with acetylene is softened near the burn but this is usually an area not subjected to maximum wear. For drilling and countersinking the connection bolt holes, a hard, high speed twist drill is used. It is very important that the drill be sharp and turned at a very low speed, usually the lowest possible on the machine. Kerosene or turpentine or both are good lubricants for this work. It is a slow process but with considerable care and attention a satisfactory job can be done.

*Chief engineer, New York Trap Rock Corp., Newburgh, N. Y.

†Formerly with Engineering Department, New York Trap Rock Corp.

Photo by courtesy of Stephens-Adamson Mfg. Co.

Typical western sand and gravel plant where extensive use is made of conveyors although good roads to the plant may be available

Open New Opportunities For Lime

National Lime Association has developed research program to help the large industrial user

Miss Roma Medford, assistant secretary, and President Stauffer, confer

THE 40TH ANNUAL MEETING of the Lime Industry and the 24th annual convention of the National Lime Association was opened May 26 at the Homestead Hotel, Hot Springs, Va., with a brief address by K. L. Hammond, chairman of the board of directors. After the usual reports, the president of the association, S. Walter Stauffer, sounded the keynote in an address which should do much to restore confidence in the lime industry, both on the part of its own producers and the public.

President Stauffer's Address

"An annual meeting is to receive reports on the corporation. It is a time to take inventory of our assets and to plan for the future. Since the Association is a vehicle for the joint activities of this industry, your annual meetings should be held for the same purpose. Those of us responsible for the program have so considered them. Rather than bore you with detailed reports on Association activities, we have endeavored in the past to bring you the men who are actually carrying on the most important part of our work, namely research. They are better qualified to report to you on this work than we are, and in addition, the fact that they are here makes possible intimate discussions; we receive the benefit of their views and they receive the benefit of ours.

"Specifications were not very severe in the early days. The quality of products was not high, but strangely enough, good results were obtained. In those days, there was very little consideration given to competition from other industries. Lime was the material for mortar and plaster, and that was that. The chemical industry was not fully developed. Our water supplies were pure. Our sewage problem was little heard of, with the exception of possibly in that little house made famous by Chic Sale.

"Along came the chemist and the engineer. Now, with all due respect to you chemists and engineers here, you have done a splendid job, but you have brought to us laymen a lot of headaches. You were not satisfied with the trial and error method of making materials and constructing buildings. Soon qualitative analyses became quantitative. Soon simple and adequate strengths became lateral, transverse, compressive and 'oppressive.' Entirely new products were concocted and new uses for old products developed. Competition quickened. Into our industry markets came cement and gypsum. These materials were developed and pioneered by men of great force and vision, and before we recognized this competition, they had secured a large part of our markets.

W. Vernon Brumbaugh, secretary, to the left, and K. L. Hammond, chairman of the board

Changing Conditions

"I wonder how many of you men realize today what a change has occurred in this industry. I was amazed several months ago, in looking up some old records, to find that in 1906, 81 percent by value of the products of this industry went into building construction and only 8 percent into the chemical and processing industries. In 1931, 31 percent went into building and 60 percent into the chemical and processing industries. And today it is estimated that only 10 to 15 percent is going into building, and from 75 to 80 percent into chemical lime. The agricultural situation has changed but little over this period.

"Now, this has all occurred in a period of 35 years. It was due no doubt, to a large extent, to the growth in the chemical industries and the demand for chemical lime, but we cannot ignore the effect that the competition of competitive products has had upon our markets.

"What were we doing while these changes were taking place? We have not been idle. It is noted on our program that this is the fortieth annual meeting of the Lime Industry. This means that the first annual meeting we held was back in 1902. I am not familiar with the early activities

In the Limelight

Some close-up "shots" of lime producers and prominent convention guests and speakers. 1—Prof. Howard R. Staley, Massachusetts Institute of Technology. 2—E. C. Powers, new member of the board of directors. 3—J. F. Gruber. 4—"Uncle Jim" McNamara, treasurer of the Association. 5—Dr. A. R. Midgley, Vermont Agricultural Experiment Station. 6—R. W. Bowen and A. C. Hewitt. 7—H. D. Brigstocke. 8—R. G. Greeves. 9—John Moores and J. A. F. Wendt. 10—Fred Warner. 11—J. P. Feiser. 12—W. D. Garvin, J. H. Robinson, Russell Rarey. 13—R. S. Sprague. 14—J. J. Urschel. 15—Reed C. Bye. 16—W. H. Moores. 17—W. F. King, A. B. Miner.

Bolton Corson, presiding officer at one of the sessions

which occurred in those days, but I do know that an organization was formed and it functioned as the National Lime Manufacturers' Association.

"In 1914 there was organized the Hydrated Lime Bureau, with headquarters in Pittsburgh. From old files and publications, it is evident that hydrated lime was aggressively promoted for mortar, plaster and for use in concrete. I have here one of their publications which many of you remember. Here is a photograph of the dam on the White Salmon River, Washington. Ten percent hydrated lime was used in this concrete. And here is the Leader-News Building, Cleveland—hydrated lime was used in all concrete and brick mortar. On another page is the picture of a reservoir at Waltham, Mass., where 5 percent of hydrated lime was used in the concrete.

"This organization did a splendid job, but for some reason or other, I do not know why, it was decided to consolidate it with the National Lime Manufacturers' Association, and in 1918 this organization was formed.

"Then began a very active period of association work. There was a splendid group of men engaged in the industry at that time. They were industry-minded and they were willing to give their time and money in the promotion of their products. I can remember Colonel Cobb, King McLanahan, Charlie Bye, William E. Carson, Jim Gager, George Wood, B. L. McNulty, and then there were some younger men—Jim McNamara and Jake Urschel and others.

"I will not attempt to give a detailed account of these activities, but for the next eight years our industry was very active. Dues were raised; our staff was enlarged; for a part of that period we had branch offices in different sections of the country; we had field men out doing intensive promotional work; we established our own laboratory in Washington where a lot of work was done for the industry, and a lot of research on new products was carried on. Many of you remember the names of men in the Association at that time. There were Hall, Phillips, Brown, Fippin, Fink, Ford, Arthur. These men were on the staff.

"But in 1927, something again happened and the Association disintegrated. Dues were reduced to one cent per ton. Our staff was cut way down. In 1928, I recall very well the meeting that was held at the old Belmont Hotel in New York. There was nobody else who would take the chairmanship of that meeting and it was forced on me. Most of those men who came to that meeting, as I recall, believed that the National Lime Association was dead and they had come there to bury the corpse. Instead of a funeral, however, they held a revival. The first day was given over to an open and frank discussion. Anybody who had anything on his chest was permitted to get it off, and the discussion lasted the entire day. On the second day, it was decided to appoint a reorganization committee. Several weeks later, this committee secured the services of Norman Hough who had just then resigned as sales manager of the Universal Gypsum and Lime Co. They placed him in charge of the National Lime Association, and during the next five years, the Association was built up and again prospered.

"Then came NRA. The less said about this period, I think, the better. However, the industry prospered during this period. The membership reached an all-time high, but "Nine Old Men" said no. I think we learned a lesson, though, in this period, that Government and business don't mix. You can drive a horse to water, but you can't make him drink.

"Then another period of disintegration set in. The membership declined rapidly. In January, 1936, Norman Hough resigned to accept a position with one of the member companies and your Temporary President took charge. The record from then to now is an open book.

Reasons for "Spotty Record"

"From this brief history, it is quite evident that the Association has had its ups and downs. Now what is the reason for this spotty record, this lack of continuity in joint industry operations? To me, one reason stands out above all others—lack of research. As a consequence, our promotion was built on sand and not on solid rock. We relied on incomplete data, wishful thinking, high pressure propaganda to put our story across. We had known for many years the desirable properties of lime. We know what lime does to mortar and to concrete. We know that it adds workability, density and water tightness, bond strength, water retention; but up to a few years ago, there were no measurements for these qualities. Even now there are no tests for a number of them.

"Just contrast this with cement. Cement is sold on one single property: strength. There is no lack of tests for this property. They have seen to that. The lime salesman goes out and contacts the prospect and says, 'Lime increases workability.' The cement salesman comes along and says, 'Oh, yes? Just use a little more cement or some of the admixtures, such as stearate. They do the same thing, but we give you strength—2,000, 3,000, 4,000, 5,000 pounds per square inch. How much do you want?'

"The lime salesman goes out and says, 'Lime increases density and makes these materials and buildings more water-tight.' The cement salesman says, 'Oh, yes? How much? We can give you the same results by just changing the proportions of your mix or by vibrating your concrete. We give you strength, though. How much do you want, a pint, a quart, or a bushel?'

"They have definite measurements for all forms of strength.

"We have lacked fundamental knowledge in many other fields. This was true, up until a few years ago. About ten years ago, a change occurred, but I doubt very much whether we were conscious of it at that time. It is said of men that some are born great, some achieve greatness and others have greatness thrust upon them. It might be said of industries, some are born through research, some achieve research consciousness, and others have this consciousness thrust upon them.

"There appeared on our horizon a man interested in construction, and particularly the materials of construc-

tion. He believed in lime and wanted more information on lime. He was connected with a great university. He had laboratory facilities but few funds, so he tried to raise some funds and he came to us, among others, and we gave him some support. I refer to our good friend, Walter Voss. I think the first year we supplied $300 for that work, and through the work of him and his able assistant, Howard Staley, our industry has been reawakened to the value of research. They have not only developed a great amount of scientific data, but they have created a thirst in us for more information.

"In 1934 there appeared another man, a man who was to have a far-reaching effect on this industry. He was engaged in an entirely different field. He was interested in the treatment of water, public health, sanitation. Through research and experimentation, he had developed a fund of information which he was willing to share with others. This man is Charles Hoover, the author of this book ("Water Supply and Treatment"), sponsored by the Association and printed and distributed by us. Through its distribution, I believe credit can be given almost entirely for the fact that today there are used over 100,000 tons more of lime per year in the treatment of water than was used ten years ago. It is being studied in the classrooms of universities, colleges and high schools. There is no city engineer or water treatment engineer who does not have this book. It has been distributed widely through industry, those industries that are compelled to treat their water supplies. It is the best public relations job that this industry has ever done.

"As the result of these two projects, I think we have become more research conscious. This is evident from the additonal work that has been undertaken. In 1937 the program at M.I.T. was expanded to include lime in concrete. In 1938 a fellowship was established at Rutgers and a study was begun on sewage and trade wastes. Later on we had Dr. Rudolfs prepare for us a book similar to the water treatment book ("Principles of Sewage Treatment"). This is being distributed, just as the water treatment book is. It is being studied and has been received by the public most favorably.

"In 1939 we learned of a study being carried on at the University of Illinois on lime, an X-ray study. A fellowship was established there in 1940, under the direction of Dr. Clark. Last year this work was expanded to include studies by the electron microscope. In January of this year, a program was undertaken at Arthur D. Little, Inc., Cambridge, Mass. This program had been supported by an individual company and it is continuing for this present year partial support, but we plan at the end of that

S. Walter Stauffer, president

time to take over this program in full.

"At this laboratory they are engaged in the study of lime and its application to the various chemical industries. We hope to develop the types of lime best suited for certain purposes, and it may even result in an improvement in the quality of our products.

"All of the men directing this work are here to report to you in person, with the exception of Dr. Rudolfs.

"No, we have not been idle. A real program has been under way. We hear much today about post-war planning. Much of it is being done by New Deal politicians in Washington who believe in a government-controlled economy and are planning just that. If private industry is to survive, it is my belief that it must do some planning itself. We must outplan the planners, and each industry has a responsibility in this undertaking. We have made a good start. The research program which the Board will submit to you looks toward improved products, new uses and more scientific development of old uses, and the development of our markets. The Association is stripped for action. Six years ago we were spending $37,000 for salaries and $3,000 for research. Today we are spending $23,000 for salaries and the budget provides for approximately $25,000 for research.

Research Reports

As usual the lime industry meeting at Hot Springs, Va., had progress reports on the research work done under the auspices of the National Lime Association at the Massachusetts Institute of Technology. The first of these was on "Characteristics of Lime Hydrates" by Prof. Howard R. Staley, and the second on "The Effects of Lime on Concrete" by Prof. Walter C. Voss.

Prof. Staley reported on tests of 56 commercial hydrated limes for plasticity, for "bleeding" and in portland cement mixtures. Of these 56 hydrates, 21 were selected as typical and elaborate studies were made. Included in these studies were water requirements, density of putties, sand carrying capacities, effect of various methods of storage of test samples, etc. He concluded that water storage of specimens was unnecessary, since one of the results of using lime in mortar is the automatic retention of water for curing of the mortar.

Prof. Voss emphasized the changed attitude in the approach to research by the Association and cautioned against a previous tendency to draw "excessive" conclusions from scattered results. He emphasized two kinds of "research": (1) attempts to prove preconceived ideas or theories; (2) a genuine prying into the unknown future in search of truth.

These tests to determine the effect of inclusion of lime in portland cement concrete were reported in considerable detail at the convention a year ago. Briefly, Prof. Voss' conclusions after one year's tests were that the inclusion of lime in lean concrete mixes definitely increased strengths, as well as making the mixes more workable.

More complete illustrated abstracts of the interesting papers by R. W. McAllister on "The Examination of Lime and Hydrate for Special Industrial Purposes"; Dr. G. L. Clark and associates on the use of the X-Ray and Electron Microscope to Examine Lime; and Chas. P. Hoover on Recent Developments in Water Softening will appear in a later issue. Priorities and Price Regulation discussions by Dr. Nelson and Abram F. Meyers appear under separate headings in this issue. Reëlected officers and the slate of new directors appears in the News About People section of this issue.

PRIORITIES

How Priorities Serve Lime Industry

New allocation system, effective July 1, not expected to change materially the present functioning of priorities under the Mining Branch of W.P.B.

By DR. WILBUR A. NELSON

ONE OF MY FRIENDS, coming down on the train heard a very interesting conversation. One man said he had filed a PD-1A three weeks ago and had heard nothing about it. A friend of his said that he has asked for a rating on a Diesel engine from the Mining Branch and the next morning the sons-of-guns had turned it down before they had time to think about it.

Now let me explain that when you file a PD-1A, it does not come through the Mining Branch until it has been so routed, and if the Mining Branch is not put on the routing, maybe it does take three weeks to get it processed. But we are attempting to see that all PD-1A's dealing with mining are promptly routed to the Mining Branch so that we can handle those cases for you.

The cases that we can assume responsibility for are all cases where priority action is given under Order P-56, which is known as the Mining Order. In that order we have a number of priority ratings. The first one, and the one that I believe is of as much importance to you as any other rating, is the one we call our "breakdown" rating. This is an A-1-a rating granted by telegram to anyone who has suffered a breakdown in his plant that is causing a partial or complete shutdown of his operations. The A-1-a rating can be extended by your supplier on that same level so that he can replenish his stock. We feel that we are giving 24-hour service in such cases, and we know that in many cases operators have told us they have gotten relief within that time.

The next rating in the Mining Order is an A-1-c rating for repair parts for one group of mines, or for anticipated breakdown for the lime industry which you represent. Your industry does not have an A-1-c quota basis on which to work in the Mining Order, but you do have an A-1-c rating for anticipated breakdown. This means that on repair parts for mining machinery, or on any items that you know have a certain life, you can tell probably within a few weeks of the time when that part will need to be replaced, and can send a written request to the Mining Branch in Washington for an A-1-c rating to order new parts. We will attempt to get a rating to your supplier in time for you to get those repair parts and thus prevent the anticipated breakdown.

In addition, we have an A-8 rating and an A-10 rating. The A-8 rating is for supplies and articles which are not repair parts to the machinery listed as Schedule "A" in the Mining Order P-56. Probably one of the most important items covered by the A-8 rating is your containers. On March 14 we received a statement from Mr. Charles Daly, of the Container Branch, which reads as follows: "This is to advise that the Steel Drum Section of the Container Branch will honor the ratings under Preference Rating Order P-56 for obtaining steel drums for the mining industry." So I think we can advise you that if you get drums on an A-8 rating, it would be desirable to do so, but if not, apply to the Mining Branch office in Washington and we will give you a higher rating on which to get containers.

The A-10 rating is a new rating added to P-56 on March 2. It is for office supplies and for other items which are not actually a part of the mining enterprise but are essential for carrying on the work in these industries.

New Machinery Obtainable

In addition to these four ratings you also are interested in the rating for new machinery. Under the new amended order, the Mining Branch can give whatever rating is necessary for an operator to obtain a machine when he has proved that it is necessary for him to have that machine from the standpoint of our overall war effort. Up until March 2 we had only one rating that we could assign for

(Continued on page 83)

Dr. Wilbur A. Nelson, Administrator of Mine Priorities, W.P.B.

CEMENT INDUSTRY INCLUDED

● ***WHILE this talk was addressed to the Lime Industry, it applies to all Rock Products Industries which are entitled to or have received Mine Serial Numbers.***

Dr. Nelson told the editor at Hot Springs that P-56 had now been extended to cover all operations of cement plants, instead of just the quarry, as heretofore. This extension, of course, is predicated on the fact that the largest part of the cement plant output is being used for defense purposes.

—EDITOR

*Presented by Dr. Nelson, Administrator of Mining Branch, W.P.B., at the Annual Convention of the National Lime Association, Hot Springs, Va., May 27, 1942.

Stockpiling

(Continued from page 41)

1½-in. gravel, ¾- to ¼-in. gravel, pea gravel, concrete sand and brick sand. The belt conveyors, on approximately 125-ft. centers, have 18-in. belting for gravel and 24-in. for sand and all discharge at 40-ft. above the ground. When filled, the stockpiles each hold 3000 tons and will just overlap in a circle around the screening plant. Winter stockpiling is done by transferring the material with a 1¼-cu. yd. Lorain 60 crane to form another circular pile around the inner one, with room for trucks to pass.

Trucks are loaded either by a Barber-Greene portable loader, or the crane, or from two 125-ton Blaw-Knox bins in the stockpiling area.

The plant was designed by company engineers and the Anderson Engineering Co. furnished new belt conveyors and the sand preparation equipment. Officers of the company are Geo. S. Wilbur, president, and Arthur C. West, treasurer and general manager. Thomas Macormick is superintendent of the plant.

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Acid Open Hearth
Steel Wire

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Flattened Strand
Preformed
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The Service Record of this wire rope continues to make and hold friends.

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Jeffrey

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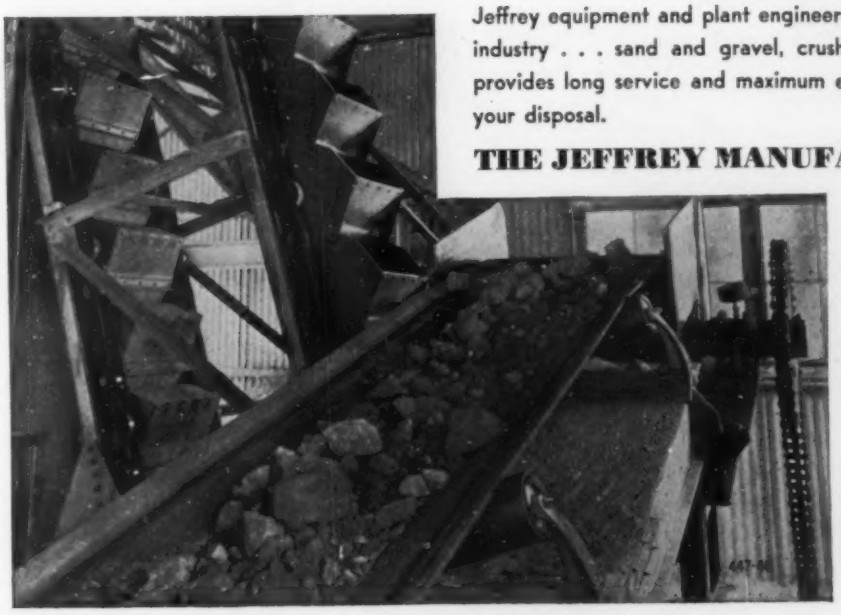
CONVEYORS	GRINDERS	PULLEYS	SPROCKETS
CAR PULLERS	IDLERS (Belt)	MONO-VEYORS	TAKE-UPS
CRUSHERS	GEARS	SCREENS	WAYTROLS
ELEVATORS	PORTABLES	TRANSMISSION	MACHINERY



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Jeffrey bucket elevator (heavy duty type) and belt conveyor are shown at left. They are handling crushed stone in a large quarry operation. Jeffrey units will speed up schedules—will soon pay for themselves.

Shown above is the dredge "Valiant", owned by the Warner Company, Philadelphia, Pa., operating in the Delaware River, near Tullytown, Pa., where it handles 900 cubic yards of raw material per hour. The bucket line is equipped with one-piece, 25 cu. ft. TISCO Dredge Buckets*, with replaceable "Rivetless" lips*, designed and built at our High Bridge plant for the old dredge "Viking".

*Patented in U S A and foreign countries

THIS modern dredge "Valiant" is a great advance over its predecessor, the faithful old "Viking", in every respect save one—THE BUCKET LINE! Here, Warner engineers decided that the same TISCO Bucket line which had served so well on the "Viking", was still the most suitable for continued use on the new "Valiant".

The Warner Company considers these TISCO Rivetless "Delaware River Type" buckets the most economical ever used. Four workers previously needed to keep plate steel buckets in repair, have been released for other work. Out of 36 TISCO buckets in service over a 6-year period, only 10 have required servicing to remove distortions. TISCO "Rivetless" lips have given three times the wear of other manganese lips formerly used.

Regardless of your dredging requirements, dredge buckets cast of TISCO Hadfield's Manganese Steel will give greater service and economy. This has been proven on dredge locations of every type in all parts of the world. Our engineers will be glad to discuss your needs.

1742 TW 1942

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CONCRETE PRODUCTS AND CEMENT PRODUCTS

★ ★ ★ HOUSING PROJECTS FOR WAR WORKERS KEEP BLOCK PLANTS BUSY

One of several large housing projects which have been keeping Columbia Concrete Products Co. busy in Toledo, Ohio. Ravinia Park Village project required 813,000 concrete masonry units.

There must be a good reason when a block manufacturer buys three Stearns Joltcrete Machines, one after another!

Gray Concrete Pipe Co., one of the leading concrete products manufacturers in the South, operates three Joltcretes. Left: Two in their Hagerstown plant. Supt. Aaron H. Davidson and Asst. Supt. Gail A. Mullendore watching operations.

At Thomasville, N. C., Gray operates a third Joltcrete. Below: W. Clyde Brandon, Block Plant Superintendent.

Stearns Joltcrete Block Machines not only make superior wall units that sell fast, but their first cost is low – sometimes scarcely half the cost of other equipment required to produce the same output.

Write for Stearns Joltcrete Folder and figures of initial and operating costs

STEARNS
MANUFACTURING CO. - ADRIAN, MICH.
GENE CLEES, PRESIDENT

Manufacturers of Complete Equipment for Concrete Products Plants, including vibration and tamp type block and brick machines, mixers, skip loaders and Straub Ostrowellator attachments.

We bought Stearns Joltcrete Machines because they make a superior block at low cost.

Gray Concrete Pipe Co.
F. B. Gray

Sell Architect First

Katterjohn Concrete Products Co., secures big housing jobs by well-planned merchandising plan. Construct modern plant

By BROR NORDBERG

Attractive display in front of office brings inquiries. Office is located on one of the main highways

UNTIL KATTERJOHN CONCRETE PRODUCTS CO. was organized almost three years ago, the builders in Paducah, Kentucky, a city of 35,000 people near the southern tip of Illinois, depended upon lumber and clay tile for nearly all construction. Concrete masonry was seldom used, and only in structures where good materials and skilled workmanship did not count for much. These block were the product of "backyards" plants which used unprocessed gravel and sand from creek beds as aggregates.

George W. Katterjohn, Jr., head of the contracting firm bearing his name, was interested in concrete masonry as a separate business several years before he went into it. He had been attending recent annual conventions of the American Concrete Contractors' Association, which were held jointly with the National Concrete Masonry Association Conventions in Chicago.

When the machinery exhibits began to feature vibrating machines, he was ready to go ahead. From his experience as a contractor in placing mass concrete by vibration, he had become sold on the theory of placement by vibration and felt that high quality masonry products could be made by the same principle.

Geo. W. Katterjohn, Jr., head of the company, seated at his office desk

Perce Clement, in charge of estimating and office manager

Then along came a low cost housing project to be built in Paducah and Mr. Katterjohn sold the architect on using cinder block. He promised the architect that he would build and equip a modern plant to make the 270,000 units needed. No concrete products plant within 90 miles of Paducah was equipped to handle the job. When the contract was let, the kilns were built and the machinery foundations were laid in advance of machinery deliveries.

The first cinder block contract was for backup and partitions to be used in the Abraham Lincoln Homes for negroes and the Thomas Jefferson Homes for whites. Since the construction of these units, the architect for the projects has been a booster of cinder block on various jobs. Other large housing projects built of "Katter Blox" (which is the trade name adopted) are the Rosenwald Homes and Browning Springs Homes projects at Madisonville, Ky. Both are of exposed concrete masonry with two coats of cement paint.

Since production started, most sales have been for defense construction of all sorts, housing projects and for industrial building. Mr. Katterjohn handles these projects personally, which involves direct selling to the architects. Concrete masonry also is being intensively sold for small jobs, and the ground work is being laid for future private construction. Since the original housing contract, H. C. Karraker, in charge of sales outside Paducah, has been constantly on the road selling the smaller jobs. Mr. Karraker was formerly in the Dunbrik business in southern Illinois and has the background and experience to really sell precast concrete.

H. C. Karraker, in charge of outside sales for the company

Large attractive sign and panels of various products catch the eye of passing motorists

His territory covers an area half way to Louisville on the east, down half way into Tennessee, the southern tip of Illinois and a small part of the State of Missouri. He carries with him all the leads available on projected building, from building reports and other sources. In the outlying communities he makes a regular practice of calling on the local bankers. In his experience, he finds the banks to be the best source of information on building while it is still in the planning stage. People in these communities who are considering building usually go to their banks for advice and information on loans before contacting anyone else. Whenever a call is made, a standard 8- x 8- x 16-in. sample of "Katter Blox" with a brass identification tag is left with the prospective customer.

Keep Large Stock

Aside from the direct selling, the company is doing some promotion and has merchandised certain policies. One is the practice of keeping about 200,000 units in stock all the time. These include the standard 8- x 8- x 16-in. cinder block, fractions, bull-nose sash block, corners, etc. This large stock on hand is insurance against unforeseen orders and emergencies, and it is an advertised fact that no units will be shipped out unless they are at least 30 days old. Much of the storage is under cover to permit loading of trucks under any weather conditions. Most dry units can be loaded on trucks without exceeding highway loading restrictions.

Being the first company of any consequence to make concrete units in Paducah, the policy is to educate the builders to use the products made and not to make a big variety of products. All the units are 8-in. and fractions — no 12 in., which many companies are forced to make. This simplification means less time lost by the machinery in making changes.

Poor grade units, previously sold in the territory, put a black mark on concrete masonry that is rapidly being overcome. Whenever possible, an attempt is made to get prospective customers and builders to visit the plant, to see the contrast with the plants they have seen before manufacturing concrete block. Moving pictures and snapshots of the big housing projects and other outstanding concrete masonry buildings are part of the sales tools, as proof of what has been done and can be done with concrete masonry. Being the contractor on some of the large projects, Mr. Katterjohn was in a good position to enforce good workmanship.

Another obstacle to the acceptance of concrete masonry is the prevalence of lumber. All the lumber dealers have been stocking clay tile for years, and clay tile and lumber are the materials that were almost universally used. Direct selling and merchandising of high grade concrete units to the prospect is the answer to this condition. No drawings or blueprints are made by the company. When necessary, an architect is called upon to do the job.

Katterjohn Concrete Products Co. has its main office on U. S. 45, a heavily-travelled thoroughfare in the city, and has set up an attractive display from which many inquiries have come. The display consists of a large pyramid of cinder block, which is an "eye-catcher" in itself, and wall panels that show the use of concrete units in exposed walls and as backup.

An old hosiery mill was selected as the site for the plant. The boiler house of the old plant is the main machinery building and the balance provides considerable covered storage. Nearly all the production is in cinder block, although some gravel concrete units are made. Railroad power plant cinders, properly sized and practically entirely free of objectionable matter, are the principal aggregates. The machinery consists of an 18-cu. ft. Stearns concrete mixer and a skip-fed No. 7 Stearns Joltcrete block machine. A pants-leg chute permits the delivery of concrete into a Dunbrik machine.

Capacity is 2000 units in 8 hr., using five 65-ft. curing kilns. Most of the shipments are made in company-owned and hired trucks. On the large housing projects, the company had a Clipper saw at the sites for cutting the units when necessary.

Big stockpile of various sizes is a good selling point. Note height of stocked units necessitated by space limitations. Large covered storage to the rear

"Now I Know I Can Stay Within the Load Limits – – – yet Carry a FULL PAYLOAD"

Ready-Mixed Concrete Operators

like the new No. 3 Smith-Mobile because it's a WEIGHT-SAVER. Approximately 1000 lbs. lighter than competitive 3 yard mixers, this new Smith-Mobile can be mounted on a 2-axle truck . . . carry a FULL PAYLOAD . . . and still stay within the stringent load limits imposed by practically all the states. There's no need to invest in an expensive 3-axle truck, with its extra expense, maintenance costs, tires, etc. A 2-axle truck reduces costs, yet fills the bill 100%.

Of course, the new No. 3 has all the usual Smith-Mobile features: HIGH DISCHARGE without hoist . . . CONTROLLED DISCHARGE without segregation...VISIBLE MIXING...FEED CHUTE CHARGING . . . etc. *No other truck mixer can give you all these features.* Ask for Smith-Mobile Catalog No. 198-B.

The T. L. SMITH CO.
2885 N. 32ND STREET
MILWAUKEE, WIS., U. S. A.

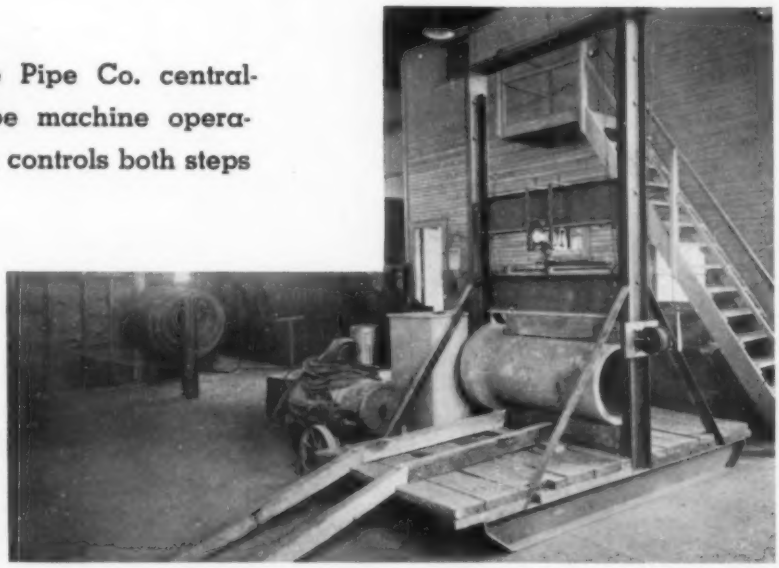
SMITH-MOBILE

A 3709-1P

CONCRETE PIPE

One - Man Controls Pipe Manufacture

Charleston Concrete Pipe Co. centralizes mixing and pipe machine operations so that one man controls both steps



Making a transverse test on a 24-in. diameter pipe. To the left may be seen the electric welder and the equipment used in assembling pipe reinforcing steel

ONE OF WEST VIRGINIA'S most up-to-date concrete pipe plants is operated by the Charleston Concrete Pipe Co. at Charleston on the Kanawha river. Organized in 1941, the company's plant, new from the ground up, has been in production a little over a year, supplying pipe to Charleston territory, the hub of a rapidly developing industrial area. Another consideration in selecting Charleston was the fact that much of the land is low and in need of drainage for its future development.

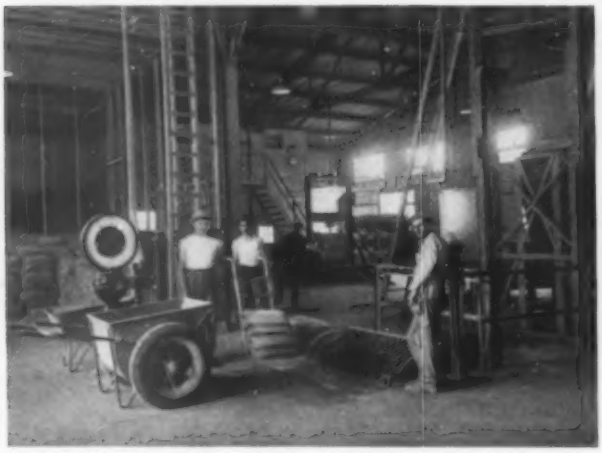
Until this plant was built, concrete pipe was shipped in from the Union Concrete Pipe Co. at Ceredo, W. Va., near Huntington, under the same ownership. At present, the plant is equipped as a partial production unit and its full capacity has not been developed.

Federal projects now take the bulk of the pipe manufactured — both sewer and culvert—for defense housing, industrial plant expansion and road drainage. Both types of pipe are machine-made bell-and-spigot, the culvert from 12- to 30-in. diameters and sewer pipe from 4- to 24-in. diameters.

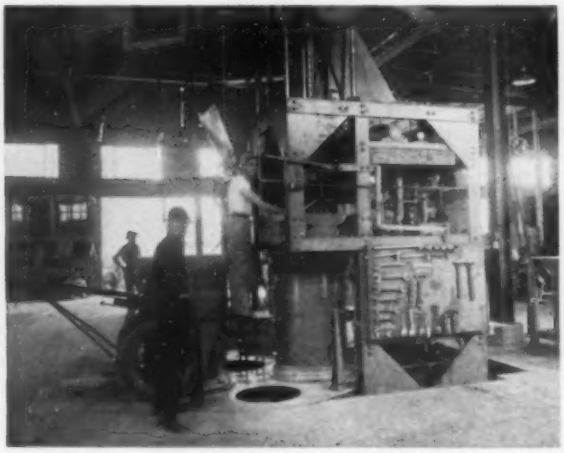
Sand and gravel aggregates, and cement in sacks, are trucked to the plant and stocked convenient to the mixer.

All sizes of pipe are manufactured on a new type Concrete Pipe Machinery Co. McCracken Model T machine that makes the pipe, bell end up. Concrete mixing is done on the floor level, with a skip bucket to charge an overhead feed hopper. Sand and gravel are shoveled into rubber-tired Construction Equipment Co. wheelbarrows that are weighed at the mixer on a Toledo platform scale. Mixing water, either unheated or heated in the Winter, is measured into the mixer by a tank with an accurate measuring gauge.

Four-bag mixes from a 30-cu. ft.



Material handling equipment. Aggregates are moved into the building from stockpiles outside by wheelbarrow onto the scale platform and from thence into mixer



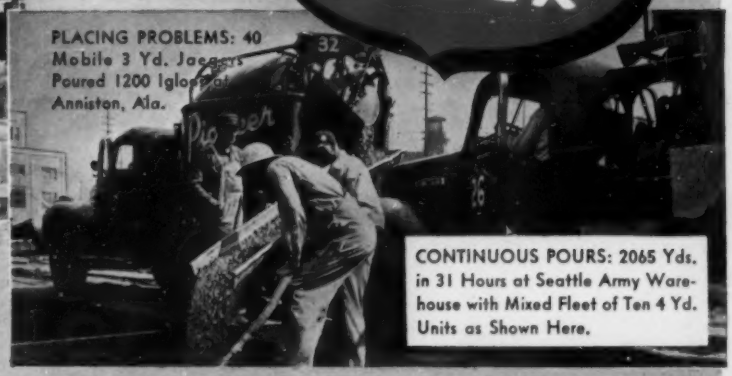
Concrete pipe machine arranged so that operator controls level of concrete in feed hopper received by skip from mixer through push-button control. Mirror permits operator to see inside hopper

JAEGER Motorized CONCRETE PLANTS MEET YOUR PROBLEMS

LABOR SCARCITY IN DESERT — 8 "HIGH DUMP" 4 Yd. Units Averaged Over 120 Cu. Yds. Hourly of Minus 1" Slump Mix on California Bomber Range.

Most of the **TRUCK MIXERS** *now speeding war work are* **JAEGER**

HIGH PRODUCTION: 95,000 Yds. for Ford Bomber Plant @ 2000 Yds. per 16 Hours—with 10 Jaeger "LOW CHARGE" 4 Yd. Units.



PLACING PROBLEMS: 40 Mobile 3 Yd. Jaegers Poured 1200 Igloos at Anniston, Ala.

CONTINUOUS POURS: 2065 Yds. in 31 Hours at Seattle Army Warehouse with Mixed Fleet of Ten 4 Yd. Units as Shown Here.

YOU OWE IT TO YOURSELF TO KNOW why more concrete is being mixed and placed by Jaeger Truck Mixers, Agitators than by any other method — why Jaegers produce higher strength, more workable concrete and bigger daily yardage, at lowest operating and maintenance cost. SEND FOR COMPLETE CATALOG AND DATA — TODAY!

THE JAEGER MACHINE CO.
803 DUBLIN AVE., COLUMBUS, OHIO
World's Largest Manufacturer of Concrete Mixing Equipment — Pumps, Hoists, Concrete and Bituminous Paving Equipment.

• Only JAEGER Offers a Type for Every Need

"HIGH DUMP": Top-Loading, with Fast, Vacuum-Controlled Discharge Door, or Combination Top-or-End Loading—to meet conditions. 2 to 5 yd. sizes.

OR "LOW CHARGE": Fastest on market. 2 to 8 yd. sizes. All Jaegers have 2-Speed Transmission (Vacuum-Controlled Truck Engine or Separate Engine Drive), One-Shot Loading, Dual-Mix Drum, Fastest Discharge.

Four 2 Yd. Units did 198 yds. in a day with this setup at Linthicum, N. C.

Storage yard for various sizes of pipe with the new plant showing in the background

Besser batch mixer are elevated by a Stearns 1-cu. yd. skip hoist bucket to the overhead machine feed hopper. The hoist is started up by push button.

Concrete is fed into the pipe molds from a belt conveyor feeder under the concrete hopper that is started up and stopped by the machine operator. Belt drive is variable speed, to control the flow of concrete according to the size pipe being manufactured. The hopper has a self-cleaning feature. As concrete flows out, it has a wobbling action that reminds one of the floating power engines in modern motor cars.

The hydraulic lift to raise the core out of the pipe had a flexible transmission drive. It has four speeds, turning and vertical, to conform to the different pipe sizes made.

Curing Methods

Rubber-tired carts move the pipe into two 20- x 100-ft. steam-curing kilns that were built with cinder block for their insulating value. The layout provides for two additional kilns. Pipe are subjected either to a 12-hr. curing period or 72-hr. in a damp atmosphere, depending upon weather conditions.

Wire reinforcing cages are made in a cutting and shaping machine and are welded together by a 15-kw., 45-amp. Taylor electric spot welder. Transverse tests on the finished pipe are made with a Black and Decker testing jack that has a capacity of ten tons.

Capacity of the plant has not yet been realized. With only two molds, 72 ft. per hr. of 24-in. reinforced pipe are made. They measure 48 in. long and have a 2⅜-in. wall thickness. Forty-eight lineal feet per hour of the 30-in. pipe are made with two molds.

William R. Purcell, manager, designed the plant. Mr. Purcell is a newcomer to the concrete products industry. Most of his past experience has been in the sand and gravel industry. He was a charter member of the National Sand and Gravel Association and formerly affiliated with the Ideal Supply Co., the Ohio Gravel Co. and the Ohio River Sand Co. J. L. Richmond is president of the company and also heads the Union Concrete Pipe Co.

Airport Contract for Pipe

QUARTZITE STONE CO., Lincoln, Kans., is very busy getting out a big contract for crushed stone and concrete pipe to be used in a big bomber base. Two big automatic concrete pipe manufacturing machines have been installed in a new building erected with concrete brick units made by the company and two curing rooms of frame construction are now ready. Several crushers have been added to augment the company's stone crushing capacity, and Diesel power plants have been secured.

Colored Precast Concrete

ARNOLD CAST STONE CO., Greensboro, N. C., has a large contract to supply colored precast concrete for a marine base hospital. Patton Davis, owner and manager of the Precast Concrete Co., Portsmouth, Ohio, is assisting Mr. Arnold in an advisory capacity on this job.

Big Ready Mix Contract

THE RICHTER CONCRETE CORPORATION, Cincinnati, Ohio, has been very busy filling a contract for 200,000 cu. yd. of concrete for an addition to a large defense plant. Forty mixer trucks, each of 2½-cu. yd. capacity, are now delivering 2000 cu. yd. daily from a plant set up adjacent to the construction site.

Concrete Burial Vault Meeting in Cleveland

AT A THREE-DAY SESSION of the National Concrete Burial Vault Association in the Hotel Cleveland, Cleveland, Ohio, June 9, 10, and 11, some very serious business was discussed, involving operations under war-time restrictions.

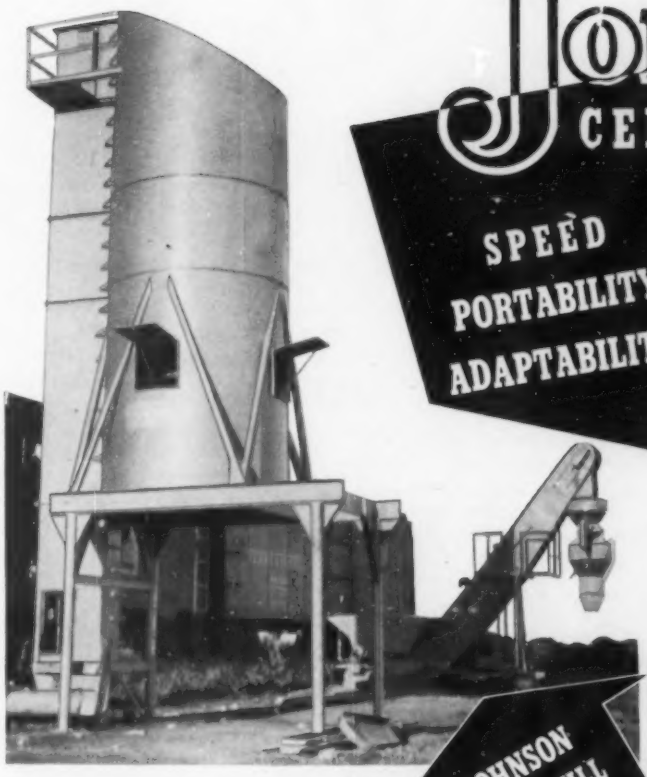
New officers elected included: President Wilbert W. Haase, Forest Park, Ill.; E. C. Jefferies, Cleveland, Ohio, vice-president; and Frank L. Mathies, Boston Post Road, Orange, Conn., secretary-treasurer and editor of the *Concrete Vault Age*, succeeding R. W. Mead, who retired after long service. The success of this convention is in large measure attributed to the work of the Convention City Committee headed by General Chairman E. C. Jefferies and S. LoPorto, chairman of the Exhibits Committee.

One of the highlights of the convention was the talk by P. M. Woodworth, field engineer of the P.C.A., on the manufacture of concrete vaults under the limitations on metal imposed by WPB order L-64. Other interesting subjects on the program included a discussion by Past President H. A. Dahlquist on Engineering Problems of the Concrete Vault Factories, followed by F. A. Washburn, Past President Chick and Retiring President, L. K. Huber. Price regulation and priorities were also explained by government officials.

JOHNSON CEMENT PLANTS

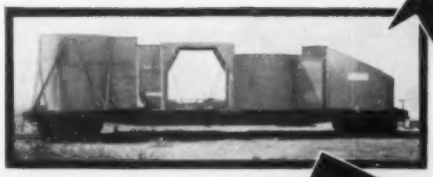
SPEED
PORTABILITY
ADAPTABILITY

NOW! MORE IMPORTANT THAN EVER BEFORE—time and labor saving features, fast efficient operation, and adaptability to any construction need or situation must be present in all construction equipment.



- ★ Only two men needed on Johnson cement plants—with hopper-bottom car or bulk truck cement delivery.
- ★ 120 batches or 200 barrels of cement can be batched per hour through any Johnson Cement Plant with manual control.
- ★ Bulk trucks, truck mixers, or both can be charged through Johnson Cement Plants.
- ★ Johnson Cement Plants are adaptable for box car, hopper bottom car or bulk truck cement delivery.
- ★ All Johnson Cement Plants are quickly and easily convertible from batching plants to transfer plants or vice versa. Transfer plants have 250 barrel per hour capacity.
- ★ Johnson Cement Plants are really portable—Elevating Charger, Dutchmill and Portable Section Cement Bins can be completely erected or dismantled by three men in two hours' time.
- ★ Elevating Charger is economical with bag cement—elimination of split sacking and much labor, plus faster batching time for both batch trucks or truck mixers are possible.

JOHNSON DUTCHMILL



JOHNSON CEMENT PLANTS MEET ALL REQUIREMENTS AND THEN SOME

PORTABLE SECTION BINS AND CEMENT SILOS

ELEVATING CEMENT CHARGER

JOHNSON CEMENT PLANTS ARE AVAILABLE WITH CEMENT STORAGE CAPACITY FROM 25 TO 7000 BARRELS.

JOHNSON PRODUCTS

Bins - Batchers - Scales - Bulk Cement Equipment - Central Mix Plants - Concrete Buckets - Roadbuilders' Equipment - Silos and Storage Bins.

CHAMPAIGN ★ C. S. JOHNSON CO. ★ ILLINOIS

SERVICE

Increase Concrete Sales By Pumping On the Job

Ready Mixed Corp., Dayton, Ohio uses pump to place concrete as a special service to contractors

AS AN AUXILIARY to its normal ready mixed concrete operations, the Ready Mixed Corp., Dayton, Ohio, purchased a No. 160 Rex Pumpcrete machine. This unit has now been in service since November, 1941.

There was a need for some means of quickly elevating ready-mixed concrete in the construction of certain types of buildings, and the practice of pumping concrete for pours above grade is gaining acceptance. Concrete is being substituted in many high places where steel customarily would have been used. Many buildings have no brick masonry so the ordinary elevator for materials is often not part of a contractor's equipment on the job.

The machine already has seen service on a number of jobs. One involved a lift of 40 ft. to pour a church roof. It has been requested by some contractors, to pour reinforced concrete floors in industrial structures and other buildings where the pour is on the ground level. These contractors prefer pumping the concrete to setting up runways for wheeling the concrete over the reinforcing steel.

Capacity of the machine is 18-cu. yd. per hour. Concrete can be lifted to a height of 110 ft. The machine, which is gasoline-engine powered, is mounted on rubber tires. It is towed to a job by one of the transit mixer trucks which usually carry 3-cu. yd. of concrete. The corporation is the largest ready-mixed concrete producer in Dayton and operates a fleet of trucks with Rex transit mixers.

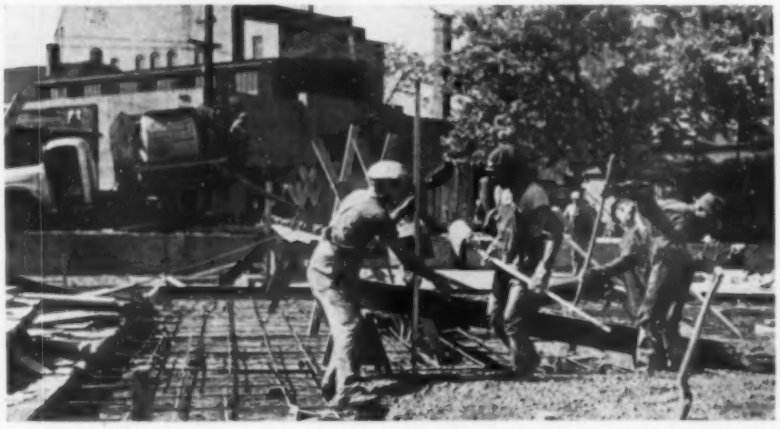
A flat charge is assessed for setting up the machine where small yardages are required, and the charge is assessed on a yardage basis for large contracts. An employe of the ready-mixed concrete company operates the machine and the contractor furnishes the help for placing the concrete and handling the pipelines. This service equipment is profitable in itself and, in addition, it will likely land more jobs for ready-mixed concrete. A. W. Kimmel is president, treasurer and manager of Ready Mixed Corp.

Above: Transit mixer discharging into Pumpcrete machine which is delivering concrete for the pouring of a reinforced concrete slab in industrial building

Increase Production of Natural Cements

PRODUCTION of hydraulic cements other than portland cement in the United States in 1941 amounted to 2,875,962 bbl., which represents an increase of 13.5 percent in comparison with 1940, according to Bureau of Mines statistics. Shipments from the mills in 1941 totalled 2,926,203 bbl., valued at $3,967,567, an increase of 16.4 percent in quantity and 17.1 percent in gross value as compared with 1940. Stocks at the mills were 19.3 percent lower at the end of 1941 than at the end of 1940. Average factory value per barrel of the product shipped from the mills was $1.36, and $1.35 in 1940. Ten natural cement and two hydraulic lime plants were operated.

Below: Showing method of handling concrete at discharge end of pipe line

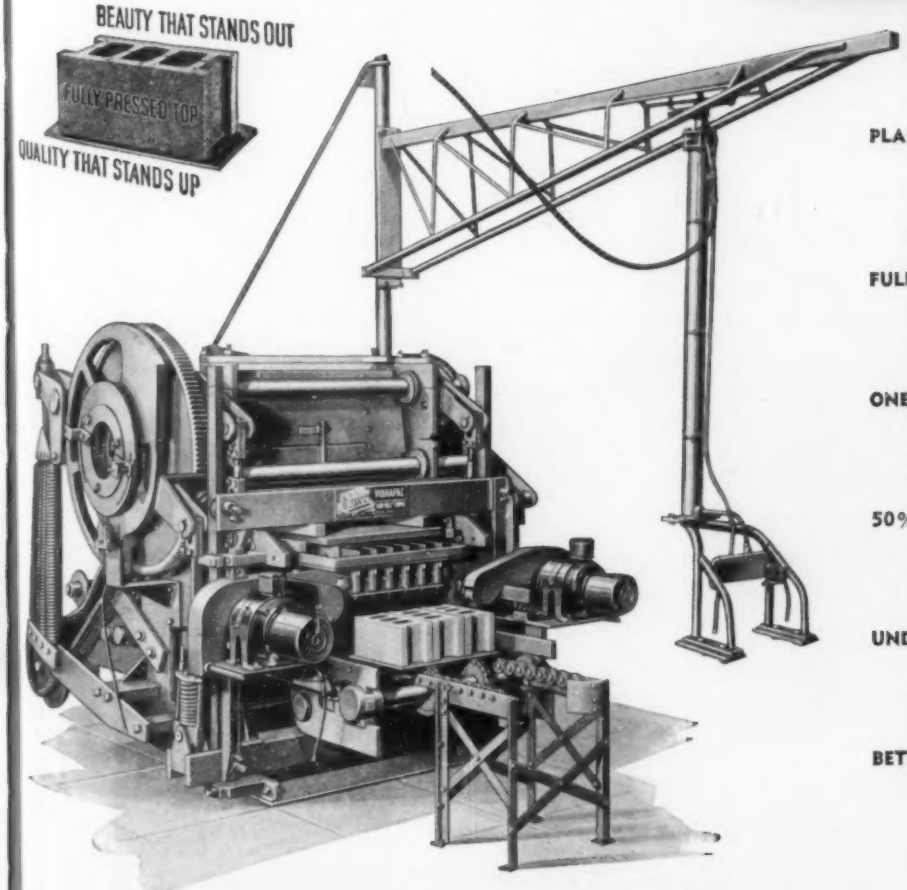


The LEADER
for Quality, Quantity and Economy in Concrete Block Production

BESSER PLAIN PALLET STRIPPERS

A Besser Plain Pallet Stripper For Every Need

TAMPERS	Besser Super Automatic	8 Hr. Capacity 3120
	Besser Victory Automatic	8 Hr. Capacity 2160
	Besser Semi-Automatic	8 Hr. Capacity 1680
	Besser Champion, Power Operated	8 Hr. Capacity 1000 to 1200
	Besser Multi-Mold, Hand Operated	8 Hr. Capacity 250 to 350
VIBRATORS	Besser Super Automatic Vibrapac	8 Hr. Capacity 4800
	Besser Victory Automatic Vibrapac	8 Hr. Capacity 2160
	Besser Master Vibrapac, Hand Operated	8 Hr. Capacity 800



Besser Super Automatic Plain Pallet Vibrapac with Mixer and Skip Loader. Capacity 600 8"x8"x16" per hour made 3 at a time on one plain pallet. Smaller units made in larger multiples on the same pallets.

Only a BESSER Vibrapac Gives You These Advantages

PLAIN PALLET ECONOMY—

By requiring only one set of plain pallets, instead of a different set for each size unit, many thousands of dollars and many tons of steel are saved in any single plant.

FULLY AUTOMATIC MACHINE—

Continuous full capacity operation with no machine operator. The **machine sets** and keeps the pace.

ONE MAN OFFBEARING—

Offbearing by one man with power hoist costs only one-third as much as offbearing from the highest production cored pallet vibrator.

50% GREATER PRODUCTION—

Vibrapac production is more than 50% greater than average production of fastest cored pallet vibrator.

UNDIRECTIONAL VIBRATION—

Undirectional vibration, under Flam and Besser patents, was the first vibration principle used in making concrete blocks commercially.

BETTER BUILDING UNITS AT LESS COST—

Fully Pressed Top Blocks with positive control of density and texture. Lower complete equipment cost and lower operating cost.

Undirectional vibration under Flam patents (other patents pending) was employed to make the first vibrated blocks ever produced commercially. The Besser Vibrapac combines undirectional vibration with the exclusive Besser Plain Pallet principle. Users of these machines are fully protected under Besser and Flam patents.

BESSER MANUFACTURING CO.

207 Forty-Second St. • Alpena, Mich.

Complete Equipment for Concrete Products Plants

THE SAVING IN PALLET COST WILL PAY FOR A BESSER VIBRAPAC PLAIN PALLET STRIPPER

"ANCHOR"

Complete

EQUIPMENT AND ENGINEERING SERVICE

Equipment for all phases of manufacturing concrete cinder block and other lightweight aggregate units. Our engineering service for new plants and modernizing old ones will help you operate more economically.

Hobbs block machines, Anchor tampers, Anchor Jr. strippers, Stearns power strippers, Stearns Joltcrete, Stearns mixers, pallets, Straublox Oscillating attachments, etc.

Repair parts for Anchor, Ideal, Universal, Stearns, Blystone mixers and others.

Anchor Concrete Mchy. Co.

G. M. Friel, Mgr., COLUMBUS, OHIO

Ready Mix Directors Pick Cleveland

NATIONAL READY MIXED CONCRETE ASSOCIATION, board of directors, held its semi-annual meeting at the Palmer House, Chicago, June 8 to discuss arrangements for the annual convention and to consider other matters of business and current importance. The attendance was unusually large, for a directors' meeting, with representation that was nationwide.

OTTO S. CONRADES, president of the National Sand and Gravel Association, and Irwin Deister, chairman, Manufacturers' Division, National Sand and Gravel Association, were guests. Mr. Conrades expressed his appreciation for the close harmony between the two Associations and his desire that their future relations become more closely knit. Mr. Deister was an active participant in discussions on priorities.

National Ready Mixed Concrete Association, together with the National Sand and Gravel Association, will hold its annual convention at the Statler Hotel, Cleveland, Ohio, January 28-29. There will be no exhibits. It is expected that manufacturers of sand and gravel machinery will decide likewise.

General Maximum Price Regulations came in for considerable discussion. Several borderline cases were presented. They were concerned with new plants built in new locations, where the producer has a prime contract and might be considered a subcontractor, distinguishing between classifications of customers as stated in the regulations, etc. An amendment has been written into the General Maximum Price Regulation, setting back the dates when it becomes effective. May 18, 1942, is the new date covering contracts with the United States or any agency thereof, except contracts with the War or Navy departments. June 15, 1942, applies to deliveries under these contracts entered into prior to May 18, 1942, except for army and navy contracts which are affected July 1, 1942.

O D T 6 order, covering tire conservation, is the main transportation order covering ready-mixed concrete operations, since nearly all hauls are less than 25 miles. It requires that mileage be reduced 25 percent. Many

1 JACKSON BRICK MACHINE = 1 COMPLETE EFFICIENT PLANT

Seven Reasons Why It Will Pay You To SPECIFY JACKSON:

1. No pallets
2. Higher Strength brick
3. Low first cost
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5. Table Pocket Liners
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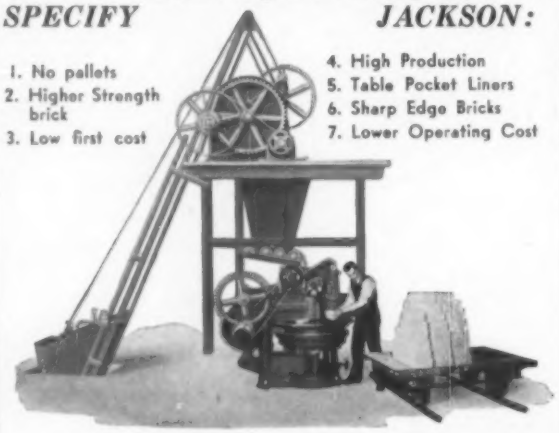
7. Lower Operating Cost



No other Brick Machine can give you all these advantages. The JACKSON Model A produces up to 28,000 brick per day . . . the Model C up to 14,000 brick per day. Check up on this *low-cost* profit-making machine *now. WRITE FOR BULLETIN J-42 TODAY.*

JACKSON & CHURCH COMPANY

SAGINAW, MICHIGAN, U.S.A.

★

You have to look to ROCK PRODUCTS for Leadership in the Industry

★

producers do not have speedometers on their trucks, on which to base any comparison. Mr. Ahearn's opinion was that the best defense the industry has for not reducing mileage, provided it absolutely cannot be done on war orders, is the fact that the industry is 95 percent or better active in war work. Overloading restrictions, under O D T 5, will be enforced, in his opinion. He urged member companies to print tire conserving rules for their employes, to work with customers on driveway facilities and to do everything possible to conserve tires. One producer told of hauling batched materials nine miles by rail for transfer into trucks on a project.

In a discussion of priorities, Mr. Ahearn said that all P orders will soon be shifted over to the Production Requirements Plan wherein the needs for equipment must be shown. Representatives of machinery concerns said they were still filling many orders under A-10 and A-8 ratings. To conclude the meeting, Mr. Ahearn reported that there were 24 new members and that the sale of 670 copies of the Manual had proven its worth.

REGISTRATION

H. F. Thomson, St. Louis, Mo.
H. F. G. Pelsue, Los Angeles, Calif.
J. F. McCracken, Louisville, Ky.
C. W. Shirey, Waterloo, Iowa.
A. R. Shiely, St. Paul, Minn.
Alexander Foster, Jr., Philadelphia, Penn.
Stephen Stepanian, Columbus, Ohio.
T. H. Fleming, St. Louis, Mo.
Otto S. Conrades, St. Louis, Mo.
Arthur A. Levison, Pittsburgh, Penn.
Herbert Jahncke, New Orleans, La.
Henry Gish, Kansas City, Mo.
G. W. Renwick, Chicago, Ill.
Irwin Deister, Fort Wayne, Ind.
Harry Williams, Riverside, Calif.
John C. Sprague, Pittsburgh, Penn.
W. Bliffert, Milwaukee, Wis.
Lester Prangue, Milwaukee, Wis.
G. K. Viall, Milwaukee, Wis.
Al. Johnson, New York, N. Y.
V. P. Ahearn, Washington, D. C.
Stanton Walker, Washington, D. C.
Morgan R. Butler, Waukesha, Wis.
E. J. Nunan, Buffalo, N. Y.
R. McLean, Columbus, Ohio.

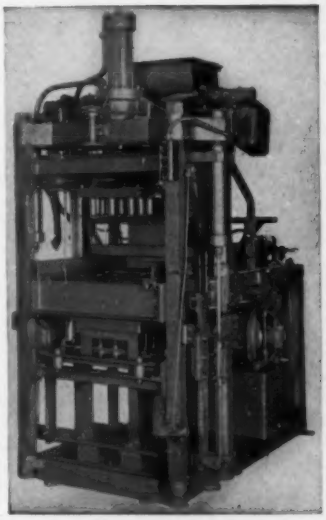
Joint Meeting of Technical Committees

In connection with the semi-annual meeting of the board of directors of the National Ready Mixed Concrete Association in Chicago, June 8, there was a joint meeting of the technical problems committee and the concrete mixer standards committee, at which it was decided to combine and reorganize as one single technical committee.

The discussion had to do with the formulation of a code of operating practice to meet some of the objec-

(Continued on page 82)

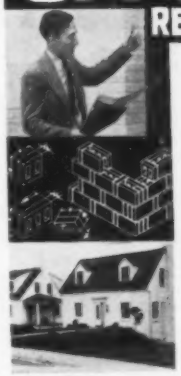
HYDRAULIC VIBRA-PRESS



A High Production Machine Making Blocks which are Demanded by the Contractor Endorsed by the Architect Desired by the Mason

The KENT MACHINE CO.
CUYAHOGA FALLS, OHIO

OPPORTUNITY
REPLACE CRITICAL MATERIALS



PRIORITIES, SHORTAGES AND INCREASING COSTS are rapidly forcing changes in the building industry. Your future may depend upon your ability to overcome and solve these problems. You can profit on these conditions by manufacturing building products out of your surplus or waste aggregate.

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Effect of Admixtures On Portland Cement

Article 4. Concluding article deals with organic compounds

By CHAS. H. JUMPER* and GEO. KALOUSEK*

FOREWORD

IN THE FIRST ARTICLE, in the April issue, the authors described the equipment and conditions involved in the laboratory experiments with three different clinkers. The temperature of cement pastes made from these clinkers, to which various soluble salts were added, were determined during the first 24 hours after mixing. As a result of these studies, it is believed that better knowledge of the thermal effects during setting and hardening will materially assist in finally elucidating the setting and hardening phenomena. The first part of Table 2, showing temperature effects and time of set of the clinkers with aluminum salts, appeared on page 55 of the April issue. In the May issue, studies involving calcium and alkali salts were given consideration. The June article covered studies of seven miscellaneous salts used as admixtures.

• • •

Organic Compounds (Group 5)

The addition of 0.025 of one percent sucrose to the clinkers increased the 1-hour temperature rise, and caused an earlier initial set. With 0.25 of one percent sucrose, clinker 1 showed no initial set at 24 hours, but clinkers 2 and 3 had early initial and final sets. It is to be noted that the thermal changes in clinkers 2 and 3 were nearly the same for both percentages of sucrose. The large difference induced by sucrose in the behavior of clinkers 1 and 2 is very interesting, and shows as in the case of clinker 2 that sucrose does not always interfere with the process of hardening of clinkers.

The presence of 0.03 percent of tannic acid altered but slightly the temperature characteristics of the pastes. With additions of 0.25 and 0.50 percent of tannic acid the maximum rises of clinkers 2 and 3 were decreased, and the time to reach the maximum rises of all three clinkers was delayed. The 1-hour temperature rise was increased for all three clinkers. The times of final set were delayed for clinkers 2 and 3. Tannic acid produced the same kind of thermal effects as did the fluosilicate, differing somewhat in degree for clinkers 1 and 3, but practically the same for clinker 2.

Additions of aniline hydrochloride, salt of a weak base, and sodium phenolsulfonate, salt of a rather weak acid, in general altered irregularly, but not extensively, the maximum temperature rises; but decreased, with increasing percentages, the time to attain the maximum rise. The one-hour temperature rise was increased slightly for clinker 1, decreased for clinker 2, and changed but slightly for clinker 3 by both salts.

Triethanolamine, a strong organic base, increased strikingly the 1-hour temperature rises of the pastes, and these temperatures increased with an increase in the quantity of the base. In contrast to some of the preceding compounds that caused a high 1-hour temperature rise with a subsequent delay of the maximum rise, this compound did not delay the maximum temperature rise. Clinker 1 showed a first maximum temperature rise at 2 hours; clinker 2 a nearly constant temperature for 1-hour; and clinker 3 but a slight break in the curve, before the main reaction started.

Similar effects took place with the addition of the salts of triethanolamine. A variation existed with changing percentages of the salts but the general characteristics of the curves were retained.

1.75 Percent of SO_3 as Gypsum with Other Compounds (Group 6)

In this group the admixtures were used with cements which were prepared by adding 1.75 percent of SO_3 as gypsum to each of the three clinkers. The results on the cements and clinkers alone, and these with each respective admixture may be compared in Table 2 and Figs. 2 and 3.

Addition of 0.25 percent of acetate ($C_2H_3O_2$) as calcium acetate did not alter significantly the temperature rises of the cements; however, for cements 2 and 3 with 1 percent of acetate the maximum temperature rises were less. The times of set were retarded for cements 1 and 3 with both percentages of the salt.

The addition of $CaCl_2$ to the cements increased the 1-hour temperature rises, decreased the time to attain the maximum temperature rises, and accelerated the setting in all tests. The influence of $CaCl_2$ on cement 1 was similar to that on the clinker, except that the 1-hour temperature rise was higher for the clinker. With the 2 percent addition the 1-hour temperature rises were much larger for cements 2 and 3 than for the corresponding clinkers. The times of set for the cement and clinker, treated respectively with equal additions of the salt, were nearly the same.

Additions of magnesium fluosilicate increased markedly the 1-hour temperature rise of all three cements. Compared with the clinkers with $MgSiF_6$, the presence of gypsum in all three cements moderated the action of the fluosilicate but, in general, the effect of the salt became more apparent when 2 percent was added. The sets of cements 1 and 3 containing fluosilicate were very much delayed, but with cement 2 the time of set was of the same order as that of the untreated cement.

The presence of gypsum in cement 1 greatly diminished the previously observed 1-hour temperature rise when triethanolamine was added to the clinker, but had no such influence in cements 2 and 3. With cements 2 and 3 the maximum temperature rise was less than with the corresponding clinkers. With the addition of triethanolamine, the time of set of cement 1 was much greater than that of the treated clinker; slightly greater for cement 2; and somewhat less for cement 3.

Summary

The effects of different admixtures on the rate of heat evolution, and on the hardening of three cement clinker pastes were determined, respectively, by measuring the temperature changes occurring during 24 or more hours, and observing the times of set. Qualitative comparisons, of these two

TABLE 2.—TEMPERATURE EFFECTS AND TIME OF SET OF CLINKERS WITH ADDITION PRODUCTS.

Admixture	Percent admixture equivalent to	Clinker 1: Temp. rise °C at 1 hr.	Clinker 1: Max. change of temp. with time °C/hr.	Clinker 1: Time to Max. temp. rise hr.	Clinker 1: Set hr. Initial	Clinker 1: Set hr. Final	Clinker 1: Condition of mix at 1 min.	Clinker 2: Temp. rise °C at 1 hr.	Clinker 2: Max. change of temp. with time °C/hr.	Clinker 2: Time to Max. temp. rise hr.	Clinker 2: Set hr. Initial	Clinker 2: Set hr. Final	Clinker 2: Condition of mix at 1 min.	Clinker 3: Temp. rise °C at 1 hr.	Clinker 3: Max. change of temp. with time °C/hr.	Clinker 3: Time to Max. temp. rise hr.	Clinker 3: Set hr. Initial	Clinker 3: Set hr. Final	Clinker 3: Condition of mix at 1 min.
Organic Compounds (Group 5)																			
Sucrose	.05%(b)	7	2	11	5	14	o.k.	22	7½	11	3	12	o.k.	21	8	11	2½	10	
	.25(b)				2½			24	12	10	1	2		20	12	15	2	5	
Tannic Acid	.01(b)	2½	1½	19			o.k.	14	4½	14	4	11+6	o.k.	19	16	7½	5½	10+6	fair
	.25(b)	4	3	18			o.k.	20	3	18½	2	24+	fair	23	14	10	5+	10+6	r.s.-dry
	.50(b)	4	1½	17			o.k.	20½	—	20½			dry	26	13	10	5+	10+6	r.s.-dry
Aniline hydrochloride	.254 Cl	2	2	15			o.k.	16	5	16	12	24+	o.k.	19	10	6	5	10+6	r.s.-fair
	1.00 "	2½	2½	13			o.k.	13	7	10	6½		o.k.	17	11	5	4	11+6	o.k.
	2.00 "	5+	7½	12			o.k.	11	11	9	5		o.k.	14	11	5	4	11+6	r.s.-fair
Sodium phenol sulfo-nate	.25(c)	4	2	10½	3	5	o.k.	17	7	11	3	24+	o.k.	18	14	6	4	11+6	
	.50(c)	4	2	16			o.k.	19	7	13			o.k.	16	12	6			o.k.
	1.00(c)	4	2	16			o.k.	19	9	12			o.k.	16	10	6			o.k.
	2.67(c)	4	2	16			o.k.	21	12	12			o.k.	17	10	5	3		r.s.-dry
Triethanolamine	1.0(b)	27	5½	10	1½	3	o.k.	27	22	3½	4	24+	o.k.	17	10	5	3	24+	r.s.-dry
	2.0(b)	33	5½	12	1½	3	o.k.	28	27	3½	4	24+	o.k.	17	10	5	3	24+	r.s.-dry
Triethanolamine Chloride	.254 Cl	19	5	13½			o.k.	30	9	6	5	8	o.k.	25	8				
	.50 "			10½			o.k.	33	15	5+	5	9	o.k.	25	7	6			r.s.-dry
	1.0 "			6½			o.k.	37	16	5+	5	9	o.k.	28	6	5½			r.s.-dry
	2.0 "	20½	7	8½			o.k.												
		33.5	6	9	5	9	o.k.	52	24	3½	5	9	o.k.	36	9	4½			
" Sulfate	.175 SO$_4$									6½									
	.50 "						o.k.												
	2.0 "	32	5½	7½	5	9	o.k.	52	24	6½	5	9	o.k.	40	11	4½			o.k.
1.75% SO$_3$ (Gypsum) Inorganic Compounds (Group 6)																			
1.75% SO$_3$ (Gypsum)		3	8	10	7	10½	o.k.	6½	16	5½	6	8	o.k.	10	27	5	6	9	o.k.
" + $Cd(C_2H_3O_2)_2$	.254 (a)	2	7	12	12	24+	o.k.	9	6½	6½	5	9	o.k.	9	28	5½	5	11+6	o.k.
" + $Cd(C_2H_3O_2)_2$	1.00 " (a)	2½	10	11	11+6	24+	o.k.	11	9	7½	5	9	o.k.	13	30	5½	5	11+6	o.k.
" + $CaCl_2.6H_2O$	1.00 Cl	4	12	11	5+	9+	o.k.	12	23	5½	5	9	o.k.	11	32	5½	5	11+6	o.k.
" + $CaCl_2.6H_2O$	2.00 "	5	25	11	5+	9+	o.k.	13	31	5½	5	9	o.k.	11	34	5½	5+	11+6	o.k.
" + $NaHSi_2O_5.6H_2O$	.54 SiF_6	7	7½	5	2½	24+	o.k.	15	10½	5½	5	9	o.k.	15	33	5½	5	11+6	o.k.
" + $NaHSi_2O_5.6H_2O$	2.0 "	21	10	12	2½	24+	o.k.	26	9½	5½	5	9	o.k.	15	34	5½	5	11+6	o.k.
" + Triethanolamine	1.0(b)	6	6½	11	2½	24+	o.k.	26	5½	5½	5	9	o.k.	15	34	5½	5	11+6	o.k.
	2.0(b)	6	6½	11	2½	24+	o.k.	26	5½	5½	5	9	o.k.	15	34	5½	5	11+6	o.k.

(a) = f.s. = flash set.
(b) = percent whole compound added.
(c) = g phenol sulfonate.

properties, between the untreated clinker pastes and corresponding pastes containing various admixtures are summarized below:

1. The changes induced in the 1-hour temperature rise by a given admixture differed among the three clinkers: but the effects on the main reaction, as manifested by the maximum temperature rise, although varying in degree, were similar for all three clinkers. However, with the addition of different admixtures to a given clinker, pronounced differences, even within a group of similar salts, were observed.

2. Aluminum compounds accelerated the reactions as evidenced by the thermal changes, and greatly accelerated the set in some instances.

3. Calcium salts induced a variety of changes in the times of set and in the thermal effects. Calcium acetate was notably a retarder of set.

4. The alkali sulfates were accelerators of the main reaction as shown by the shorter time to attain the maximum temperature rise, and often caused a very early initial set.

5. Cupric chloride, manganous sulfate, magnesium fluosilicate and fluosilicic acid, in general, markedly increased the 1-hour temperature rise, and delayed the time to reach the maximum temperature rise, as well as the final set.

6. Sucrose caused an increase in the 1-hour temperature rise and induced both retardation and acceleration of time of set among the clinkers.

7. Tannic acid delayed the maximum temperature rise and the final set.

8. Triethanolamine and its chloride and sulfate salts behaved as vigorous accelerators of both the set and the thermal changes.

9. Some of the admixtures added to cements indicated that the presence of gypsum may or may not alter the effect of the addition agents.

Concrete to Replace Steel and Cast Iron Pipe

IN KEEPING with the instructions to re-examine all war contracts to determine whether they are indispensable to the war effort, the Federal Works Administration also has been studying the possibility of substitutions for critical materials. One of the suggestions has recommended the substitution of concrete pipe in place of steel and cast iron for water mains and the use of non-reinforced concrete pipe for sewers.

Open New Quarry

THE ELKORN LIMESTONE CO., recently formed by Ford Nunnelley and Earl Hawkins at Georgetown, Ky., reports a heavy volume of business. It is said that the limestone is of excellent quality and meets all specifications of the state highway department. The recently completed plant is powered by an 85-hp. Waukesha gasoline engine which drives a Champion No. 6, 12- x 26-in. jaw type crusher and a 14- x 28-in. roll crusher. A ¾-cu. yd. P & H shovel and a Sullivan air compressor also are part of the equipment.

Fire Destroys Dredge

GIFFORD-HILL & CO., INC., Dallas, Texas, lost an electric-powered dredge by fire with an estimated loss of $20,000. The fire was thought to have been started from a short circuit in the wiring of the dredge when a fuse blew out on the 13,000-volt side of the power line serving the company at the pit, according to a report by Joe Greer, superintendent of the plant. Operations have been continued with equipment borrowed from other companies.

New Gravel Plant

THE MORRAINE SAND & GRAVEL CO., Dayton, Ohio, has set up a new gravel plant which is said to have several unusual features. This new unit was built to provide materials for a highway job 15 miles long and 24 ft. wide which will parallel the present Dixie highway. Approximately 105,000 cu. yd. of sand and gravel will be supplied, according to Clifton Hollihan, president of the sand and gravel company.

No Steel in Concrete Road

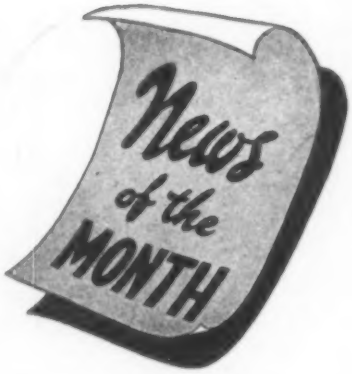
OHIO is building a 4½-mile section of concrete highway without using any steel reinforcing, according to news reports. This is the relocation of State Route 8 in the vicinity of Dover dam which started June 1. The contract for the relocation is held by Frank Masuda, a Wisconsin contractor.

Moving Cement Plant

WABASH PORTLAND CEMENT CO., Detroit, Mich., is dismantling its old Stroh, Ind., plant and is moving most of the usable machinery to its Osborn, Ohio, plant. The Stroh plant is a wet process unit with three kilns, using marl for raw material.

Buy Gravel Firm

JAEGER BROS., INC., West Bend, Wis., recently purchased the Northern Gravel Co., one mile west of Barton. Harry and Joseph Jaeger, the new operators of the big gravel plant, have been doing an extensive excavating and road building business.



Big Increase in Liming

NATIONAL LIME ASSOCIATION, Washington, D. C., has compiled its annual report for 1941 on the approximate consumption of all liming materials on United States farms during 1941. The total last year was 15,951,600 tons, comprising 3,400,733 tons of ground limestone, 10,920,757 tons of limestone screenings and meal, 189,495 tons of burned lime, 226,121 tons of hydrated lime, 660,199 tons of marl, and 554,295 tons of miscellaneous materials.

New Block Plant

THE MARION CINDER BLOCK MANUFACTURING CO., Marion, Va., has moved into its new plant located on Church street. It is constructed of cinder block, and is a two-story structure 28- x 40-ft., with three 30- x 60-ft. curing rooms. A new Kirkham vibrating block machine has been installed. B. T. Barnett is owner and manager.

Large Gravel Contract

THE LYMAN-RICHEY SAND AND GRAVEL CO., Omaha, Nebr., has established a large gravel plant at Big Spring, Nebr., to furnish aggregates for an ordnance plant. Gravel will be obtained from the South Platte river, and production is expected to reach 100 cars daily.

Open New Joist Plant

GRAVEL PRODUCTS CORPORATION, Buffalo, N. Y., has built a modern plant at Tonawanda, N. Y., for the manufacture of reinforced concrete joists by the Lithibar system. At the formal opening on June 6, many prominent officials, contractors, and others interested in building materials were present. Ernest M. Hammond is president of the company.

Big Pipe Contract

THE PLATTE VALLEY CEMENT TILE MANUFACTURING CO., Bayard, Nebr., has been awarded a contract to make 53 miles of concrete pipe for an ordnance plant. This contract totals $122,000, and with previous contracts, including one mentioned in the June issue of ROCK PRODUCTS, the total defense work awarded to this company amounts to more than $200,000, according to President George Lillie.

Gypsum Plant Capacity

A RECORD-BREAKING DEMAND for gypsum board to supply military construction needs impelled the Bureau of Mines to make a survey to determine gypsum processing plant capacity, and the percent of capacity utilized.

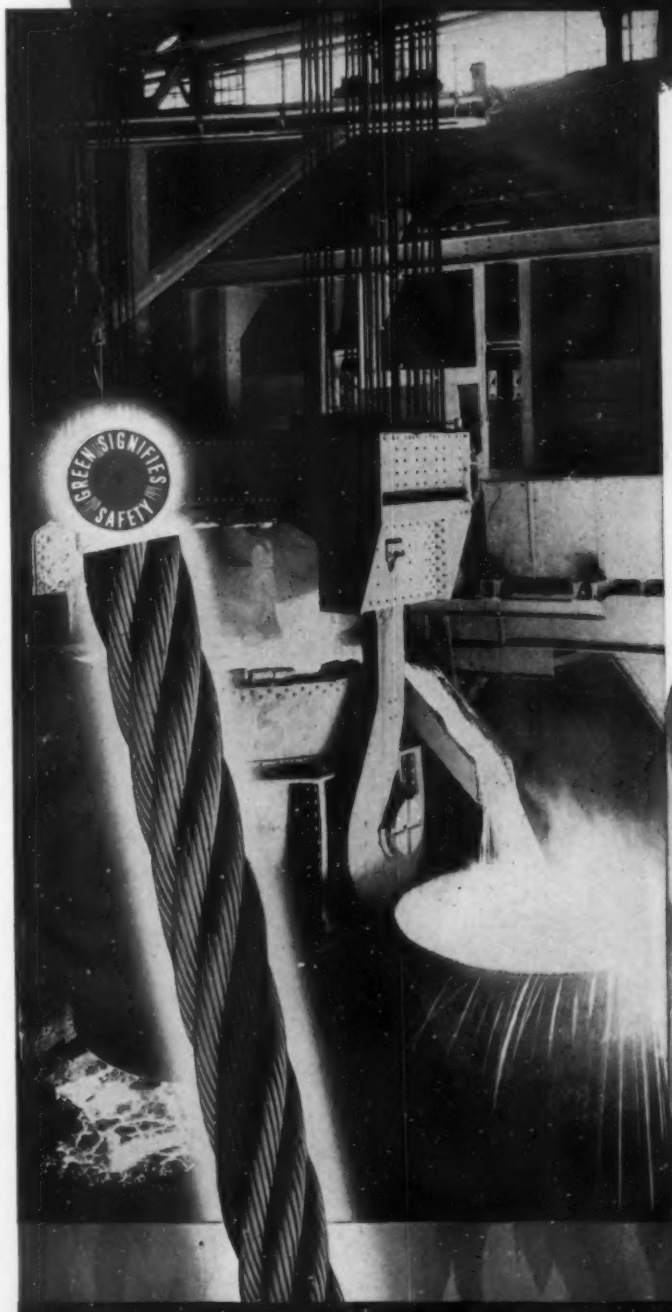
Capacity per 24 hours in square feet of standard types of gypsum board (36 machines) amounted to 13,104,600 for ⅜-in. lath; 8,366,800 for ½-in. wallboard; and 7,438,280 for ½-in. sheathing. In 1941 production of calcined gypsum totaled 3,980,567 short tons which was obtained from 179 kettles, 13 rotary kilns, 8 beehive kilns, and 4 grinding-calcining kilnmills. Capacity of gypsum calcining equipment, as of December 31, 1941, in the 57 active plants totaled 29,137 short tons per 24 hours of "first-settle" calcined gypsum suitable for use in common wall or base-coat plasters.

Lime Safety Winners

THE NATIONAL LIME ASSOCIATION safety competition of 1941 included 48 plants, 11 of which had accident-free records for the year. Accident-severity rate was 4.49 per thousand man-hours of employment, decreasing from 6.24 the previous year. On the other hand, the accident-frequency rate increased from 30.7 per million man-hours in 1940 to 38.5 in 1941. Standard Lime & Stone Company's Bakerton, W. Va., plant had the best record, operating 213,065 man-hours without a disabling injury.

Other plants having accident-free records are: North American Cement Corporation lime plant at Martinsburg, W. Va.; Standard Lime & Stone Co., Knoxville, Tenn.; United States Gypsum Co., New Braunfels, Texas and Cordova, Ill.; The Warner Co., Bridgeport, Penn.; Marblehead Lime Co., Marblehead, Ill.; Hawaiian Gas Products, Ltd., Honolulu, T.H.; Newala Lime Works, Newala, Ala.; The Haden Lime Co., Houston, Texas; and Superior Lime & Hydrate Co., Pelham, Ala.

CONSERVE STEEL BY THOROUGH MACHINERY MAINTENANCE



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Inspect for proper lubrication. Don't wait until your rope is dry to lubricate it. Lubricate your rope before it shows evidence of such need. A dry rope may be a ruined rope.

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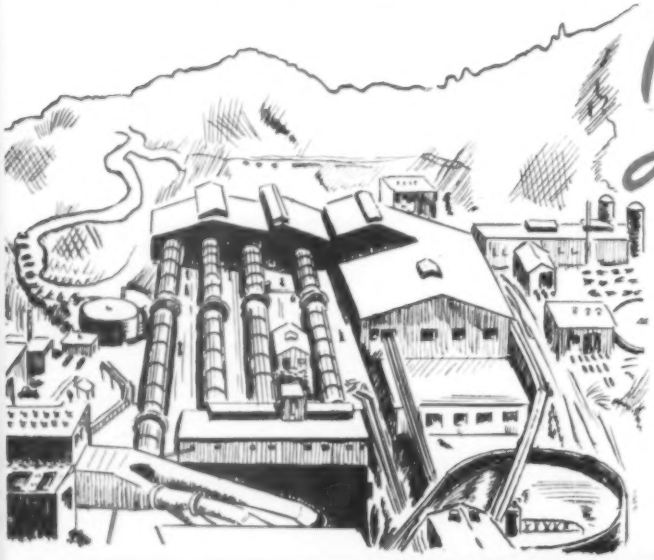

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THE PORTLAND CEMENT INDUSTRY IN WAR TIME

★ ★ ★ ★

INCLUDING TECHNICAL TRENDS IN THE INDUSTRY DURING THE WAR AND PREPARATIONS FOR POST-WAR DAYS TO COME

★

WAR WORK FIRST, according to the needs and welfare of the U.S.A. is the policy of the Portland Cement Industry. *85% of all this industry's efforts are going to war effort at this time.*

HIGHER PRIORITY RATINGS have been made available for the cement industry; P-56 privileges have been extended to include not only the quarry, as in the past, but all of the industry's operations.

CONCRETE IS BEING SUBSTITUTED FOR STEEL in numerous instances; it is also being substituted for wood in housing, cement is being used for soil stabilization, is used at airports . . . even asbestos cement products are being substituted for steel plate in numerous places. Modern design of concrete for highways, streets, airports and structures, which practically eliminate the use of reinforcing steel, are preserving important outlets for concrete.

POST-WAR TRENDS will involve tremendous volumes of cement in connection with rehabilitating slum areas, building and repairing pavements, developing hydro-electric power, building new post-war industries, maintaining railroads, improving water supply and sewage works, and contributing new farm structures.

* * *

These and many other interesting current, vital subjects dealing with cement and *technical trends in the cement industry* will be dealt with *authoritatively* and *interestingly* in the ANNUAL AUGUST CEMENT ISSUE OF ROCK PRODUCTS, *the most outstanding issue of its kind ever to be printed.*

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To save the time involved in writing individual letters for this new literature, you may obtain them by merely checking and mailing the coupon on the next page.

1 BALL MILLS.—The Eimco Corp. new Bulletin No. 201 describes and illustrates ball, rod and tube mills for wet or dry grinding of metallic ores, cement rock, etc. The bulletin also contains a setting diagram and tables of dimensions, weights and capacities.

2 BELT VULCANIZER.—The B. F. Goodrich Co. has announced a change in the design of its No. 28 belt vulcanizer, to allow greater service. It is now made with a square instead of a diagonal end, making it possible to cure wider belts. The new design is listed as "Square End No. 28".

3 BLOCK MACHINE.—Stearns Mfg. Co. has issued a service manual for operators of No. 9 Joltcrete block machines, consisting of 56 pages of detailed information, including 23 full-page drawings, on the installation and maintenance of these vibration machines.

4 BUCKETS. — Harnischfeger Corp. has released a new bulletin, No. C-27, which demonstrates operation of the single line grab bucket and the ease with which it is attached to any crane, hoist, or derrick hook. The folder also gives clearance dimension data on five sizes from ½ to 2½-cu. yd. capacity, and weights.

5 CONVEYORS.—Link-Belt Co. new 32-page catalog and data book No. 2075 describes two new sizes of the Bulk-Flo elevator-conveyor. The book contains diagrams, gives a long list of materials that can be handled, and contains illustrated case studies, with tables of sizes, capacities, dimensions, etc.

6 COMPRESSORS. — Chicago Pneumatic Tool Co. has issued Bulletin 758-1 describing and illustrating portable compressor units featuring a new compressor and a new gasoline engine.

7 COMPRESSORS. — Worthington Pump and Machinery Corp. has issued Specification L-640-82, describing and illustrating Types HB and HS 9-in., 11-in., and 13-in. stroke, single horizontal, single stage compressors, to be used with Bulletin H-621-B8 which describes and illustrates Type VS vertical single cylinder, single stage air or water-cooled compressors. Also an 11-page loose-leaf folder WP-1099-B10A on "How Worthington Serves Industry."

8 CRANES.—R. G. LeTourneau, Inc. has released two new 4-page bulletins, one showing the Tournacrane for operation around factory yards, industrial plants, building construction and earth-moving work. Complete information on lifting capacity and speed are given. The other bulletin describes the Tournapass, a portable, low-cost overpass, designed to eliminate traffic congestion at busy intersections. Photographs, actual time studies and car counts are featured, also transportation, assembly and construction are explained.

9 CRANE.—Link-Belt Speeder Corp. has issued a new 6-page illustrated Bulletin No. 1928 on their Model HC-70 truck-mounted crane which can be used with hook block, clamshell bucket, or a dragline bucket, and can go almost anywhere at any time under its own power. Brief specifications, clearance dimensions and lifting capacities are given, including capacities with 30, 40 or 50-ft. long boom, with or without the use of outriggers.

10 CRUSHER. — Denver Equipment Co. has brought out Bulletin No. C12-B1 illustrating and describing various sizes of steel frame anti-friction bearing type jaw crushers.

11 CRUSHERS. — Gruendler Crusher and Pulverizer Co. Catalog 601 describes and illustrates various types of crusher and screening plants, hammer mills, roll crushers, etc. The catalog also contains diagrams of these crushers and crushing plants.

12 CRUSHER. — Kennedy-Van Saun Mfg. & Engr. Corp. has issued Bulletin No. 800, illustrating and describing various crushers.

13 DIESELS.—Caterpillar Tractor Co. has released Form 6905 illustrating and describing the savings and other practical advantages offered by its Diesel-electric sets. It also contains illustrations of many installations.

14 DIESELS. — General Electric Co. has published Bulletin GEA-3756 describing and illustrating the 25-ton Diesel engine which is designed specifically for use in industrial plants and embodies many features found in railway-type switchers. It is of standard design built for stock and gives safe, fast, reliable, economical service.

15 DOZER.—R. G. LeTourneau, Inc. has made available a broadside-poster, Form No. A-278, showing the four types of dozers available and giving condensed specifications on each model.

16 DUST COLLECTOR.—American Foundry Equipment Co. has released Catalog No. 82 containing information about the high efficiency cyclone dust collector. It is profusely illustrated and clearly shows all mechanical features and specifications, thoroughly explaining the construction and operating details.

17 DUST COLLECTORS. — Parsons Engineering Corp. has issued a bulletin illustrating and describing its oval bag dust arrestors and unit type arrestors. The unit type arrestors are intended primarily for applications such as grinding wheels, tumbling mills, small pulverizers, screening equipment and similar operations where a restricted amount of air is handled. The unit may be made portable by means of a small truck. It is shipped completely assembled ready for operation.

18 DRYERS. — McNally Pittsburg Mfg. Corp. has issued Bulletin No. 741 describing and illustrating centrifugal dryers.

19 EXCAVATORS. — Harnischfeger Corp. has issued a new bulletin, No. X61-1, illustrating and describing the 1½-cu. yd. P&H Model 655-A excavator, which is built for quick changeover to either shovel or dragline, crane or clamshell. Large lifelike photos bring out the details of the true tractor type crawler design, its all-welded rolled alloy steel upper and lower frames, and low pressure hydraulic control.

20 FILTER.—Denver Equipment Co. has issued a two-sheet Bulletin No. F8-B1 describing and illustrating 3-ft. vacuum rotary filter with drum cast in one piece.

21 FURNACE PARTS. — American Manganese Steel Division of the American Brake Shoe & Foundry Co. has released Bulletin 1041-A containing interesting descriptions and many illustrations of alloy heat treating containers and furnace parts and fixtures.

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22 GYPSUM LATHE. — Gypsum Association has published a booklet describing three types of gypsum lath—plain, perforated, and insulating. Also included are facts about gypsum lath, including sizes, weight, fire resistance ratings, sound transmission, insulation, and the value of insulating gypsum lath as a vapor barrier. An architect's specification is included to make it complete.

23 METERS.—Bailey Meter Co. Bulletin No. 16 entitled "How to Safely Stretch Steaming Capacity," explains how the proper use of metering and control equipment avoids frequent shut-downs for maintenance, insures safety of men and equipment, reduces fuel consumption, and maintains efficiency while new operating crews are being trained.

24 NOZZLES.—The Deister Concentrator Co. has brought out a folder illustrating and describing water spray-nozzles for washing materials.

25 PLACER JIGS. — Pan-American Engineering Co. Bulletin PM contains data on use of jigs in placer operations and in mills.

26 PULVERIZERS. — Raymond Pulverizer Division, Combustion Engineering Co., Inc., has published a new Bulletin No. 52 which contains a brief summary of Raymond mills, pulverizers, and air separators for the production of powdered materials by dustless operation.

27 PUMPS.—Allis-Chalmers Manufacturing Co. has released a new engineering data book for pumps, B6018-B, containing complete engineering data on its SS unit pumps and the "electrifugal". Head capacity tables and dimension charts make it easy to select proper pumps for individual applications. The units described are built in a wide range of sizes for capacities from 10 to 2750 g.p.m. and for heads up to 575 ft.

28 PUMPS.—Chain Belt Co. new Bulletin No. 400 illustrates and describes Rex speed prime pumps ranging in capacities from 3000 g.p.h. to 125,000 g.p.h. Included in the bulletin is not only detailed information and specifications concerning the design and manufacture of these pumps, but also valuable data on how to pick a pump for a specific job.

29 PUMPING CONTROL. — The Foxboro Co. has issued Bulletin B-294, describing Rotax electrically-operated control as employed in pumping applications.

30 PUMPS.—Lawrence Machine and Pump Corp. Bulletin 206-2 describes and illustrates non-clogging sewage and sludge pumps made in horizontal and vertical sizes from 4-in. to 24-in.

31 PUMPS. — Pennsylvania Pump and Compressor Co. new bulletin, No. 238, illustrates and describes the Thrustfre multi-stage centrifugal pumps in the 4, 5, 6 and 7 stage series. The illustrations are large and clear.

32 PYROMETER. — Wheelco Instruments Co. has issued Defense Bulletin No. 1 on Priorities and Pyrometers. The information given points out the present scarcity of various materials and lists other materials which can be used as substitutes. Recommendations are also given on maintaining present equipment.

33 RUBBER HOSE.—The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc. has prepared two useful wall cards on the care of rubber hose and for proper attaching of couplings. Both cards are 8¾-in. x 11-in. and have an eyelet for convenient hanging.

34 SAFETY EQUIPMENT. — Mine Safety Appliances Co. has published an 8-page Bulletin No. G-5, describing and illustrating safety equipment for plant protection, including gas masks, helmets, gas detectors, inhalators, asbestos suits, goggles, respirators, first-aid kits, Foille for burns, stretchers, splints and fire blankets.

35 SCRAPERS. — LaPlant-Choate Manufacturing Co., Inc. has released a 16-page booklet describing and illustrating earth-moving, land clearing and snow removal equipment, which is built exclusively for use with "Caterpillar" tractors. Sections are devoted to cable-operated scrapers, ranging in size from 12 to 33 cu. yd., to hydraulically operated scrapers of 3.8 to 8.2 yd., and the new CW-10 "Carrimor" 10-cu. yd. scraper.

36 SHOVELS. — Lessmann Manufacturing Co. 4-page folder illustrates and describes shovels and tractors built as one unit.

37 SIGNALLING CONTROLLER. — Leeds & Northrup Co. has published an 8-page Catalog N-95-168(1) describing and illustrating the new signalling controller which tests condensate automatically. It can also operate external warning bells or lights.

38 SPEED RECORDERS. — Leeds and Northrup Co. has issued a 12-page Catalog N-27 describing and illustrating the Micromax speed recorder which measures and records speed of rotating machinery with high accuracy and reliability.

39 TEMPERATURE INDICATORS. — The Foxboro Co. has released a new bulletin, No. A-305, presenting its complete line of potentiometer temperature indicators and indicating resistance thermometers. The instruments illustrated and described include single-point and multiple-point models, models equipped with selective key-switches for as many as 82 contact points, as well as the popular portable models.

40 THICKENERS AND CLARIFIERS. — Hardinge Co., Inc., has published Bulletin No. 31B, describing and illustrating various types of thickeners and clarifiers.

41 TIRES.—The Firestone Tire and Rubber Co. has released booklet C-401 explaining in detail the rules for proper care of truck and bus tires and contains suggestions which will enable operators to obtain every possible mile of service from their present tires.

42 TRAIL-DUMP.—Koehring Co. has published a new catalog K179 describing and illustrating the Model 120 train-dump. It presents the machine as a complete unit, with individual assembly illustrations, clearly depicting the operating functions and the many special features.

43 TRUCKS.—Barrett-Cravens Co. has released Bulletin No. 501, describing and illustrating lift-trucks and skids, portable elevators and cranes, barrel and drum storage racks, etc.

44 WASHING PLANT.—Iowa Mfg. Co. has issued a single sheet specification bulletin No. PWP-1 describing and illustrating a portable washing plant, which is built to handle small jobs that require washed aggregates. The bulletin gives complete details and specifications.

45 WROUGHT IRON.—A. M. Byers Co. has brought out a new 1942 general catalog providing complete information about everything they are making today.

Detach and Send Us This Post Card ↓

(7-42)

ROCK PRODUCTS, 309 W. Jackson Blvd., Chicago, Ill.

I would like to have the items circled.

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45

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Company .....

Street .....

City & State.....

This Simple Idea . . .
is SAVING BELTS
for *Industry*. . . and Rubber for the *Nation*

To see for yourself the belt-saving importance of the CONCAVE SIDE, just pick up *any* V-belt and bend it as it bends when it goes around a pulley.

As the belt bends, grip its sidewalls firmly with your fingers as in the photograph above. You will feel the sides of the belt *change shape*. If the sides were straight before bending, they will *bulge outward* as the belt bends. (See Figure 1 on the right).

Now look at Figure 2. Here you see how bending changes the shape of a belt that is built with the patented Concave Side. The side becomes perfectly *straight*. This belt, when bent, precisely fits its sheave groove. Here are the savings:—(1) There is no side-bulge. This means *uniform* wear—*longer* life—a saving in belts for you, a saving in rubber for the Nation. (2) The full side-width of the belt uniformly *grips* the sheave groove wall—carries heavier loads without slippage—another saving of belts and a saving in power, too!

Only belts built by Gates are built with the Concave Side, a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Denver, Colo. 999 South Broadway
Dallas, Tex. 2213 Griffin Street
Portland, Ore. 333 N. W. 5th Avenue
San Francisco, Cal. 2700 16th Street

NEW EQUIPMENT

Multiple-Unit Welder

HARNISHFEGER CORPORATION, Milwaukee, Wis., has doubled production of its Model WA-200 P&H-Hansen square frame welder. An interesting feature of this welder is its quick parallel hook-up arrangement for combining the current output of

Square frame welder with portable mounting

two or more units when work calls for higher current capacity. This parallel hook-up is instantly accomplished by merely throwing a switch. Each unit has a range of from 30 to 260 ampere capacity.

Another feature of this welder is the single control current selector. Whether one unit or a parallel set-up is being used, one control setting gives the operator automatic arc response for all classes of work. This improvement is said to eliminate the possibility of mis-synchronizing open circuit and arc voltage.

Diesel-Electric Switching Locomotive

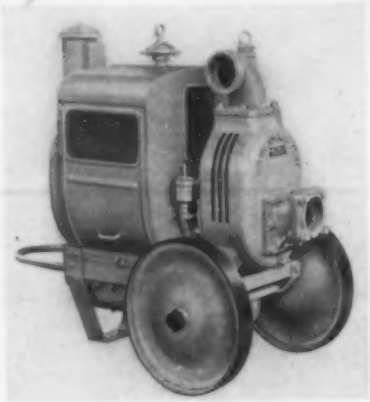
THE ATLAS CAR & MFG. CO., Cleveland, Ohio, has brought out a 65-ton Diesel-electric switching locomotive, the largest of this type ever built by this company. This locomotive has drives of the double reduction spur gear type, totally-enclosed, and arranged so that the motors are mounted as integral parts of the drives. The drives are mounted on the axles with Timken roller bearings and heavy duty ball bearings are used to mount countershafts and armature shaft. A third point support is provided, allowing axles to follow track irregularities.

Each unit is powered with two Cummins Model HBIS-600, supercharged, 6 cylinder Diesel engines, each rated 200-hp. at 1800 r.p.m. Generators comprise two Westinghouse No. 193, shunt-wound, single bearing, self-ventilated type which provide power for four Westinghouse No. 1443-A, series-wound, self-ventilated traction motors, continuously rated at 300 amps., 300 volts.

Weight of the locomotive is 130,000 lb. Starting tractive effort is 39,000 lb. and continuous tractive effort is 14,900 lb. Maximum safe speed is 30 m.p.h., and speed at continuous tractive effort is 6.1 m.p.h.

Portable Pump

CHAIN BELT CO., Milwaukee, Wis., has announced a 4-in. pump with a capacity of 30,000 g.p.h. This pump is powered by a 10-12-hp. air-cooled en-

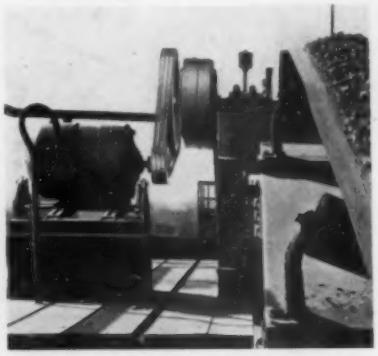


Four-inch pump with a capacity of 30,000 g.p.h.

gine. It is self-priming and has the patented Rex Z-Metal air peeler which is said to peel the air from the impeller when the pump is priming or when it is actually pumping. The same metal is used in the impeller and alloy steel volute liners are employed to reduce wear.

Conveyor Drive

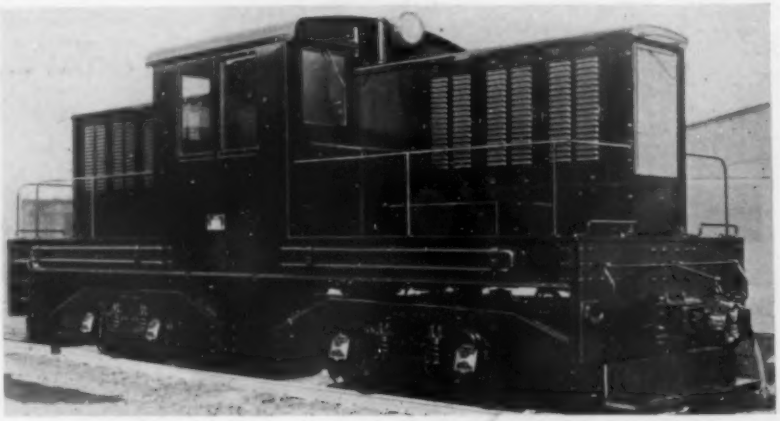
THE AMERICAN PULLEY CO., Philadelphia, Penn., has developed its Econ-O-Matic V-belt drive and re-



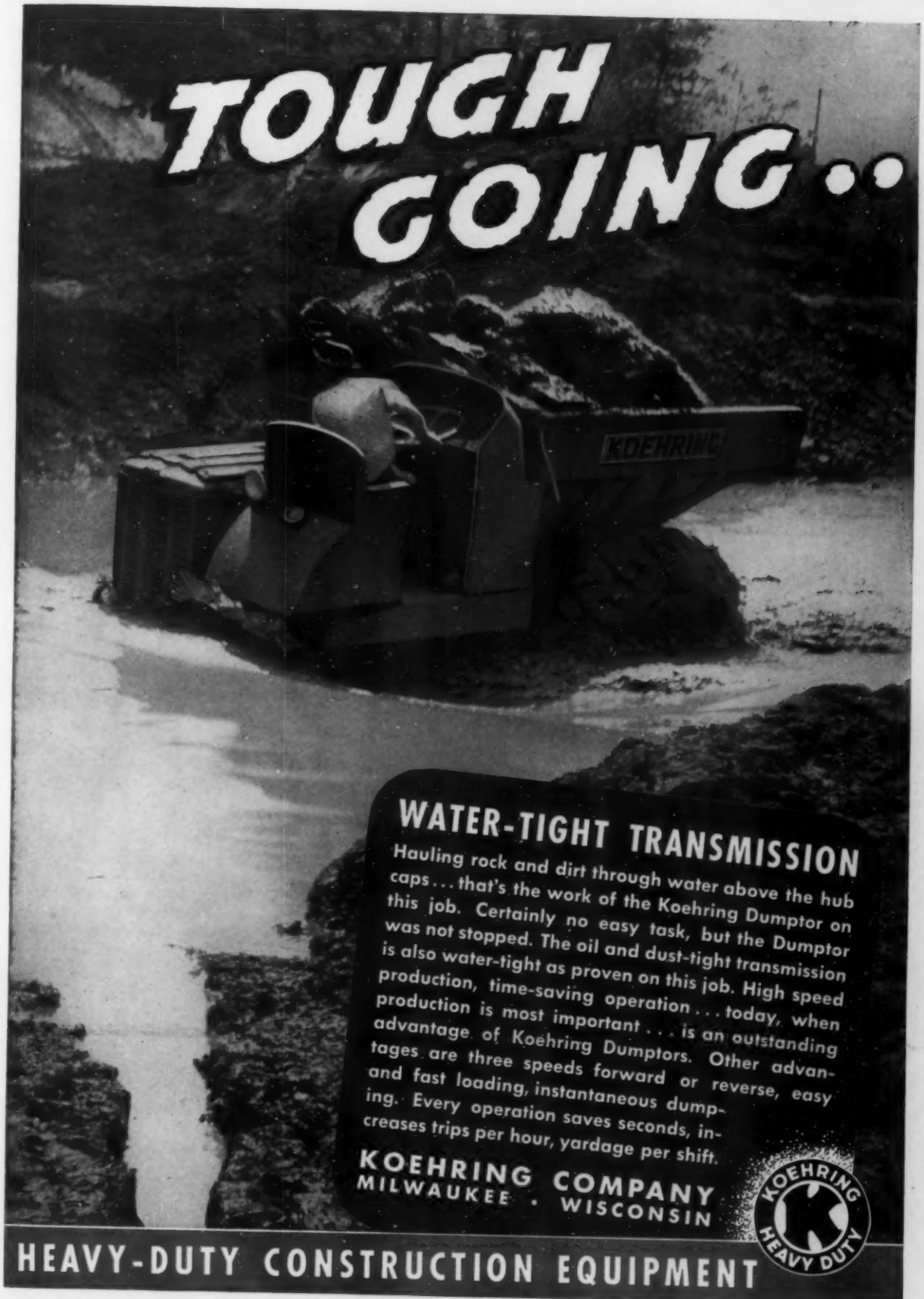
Installation of V-belt drive with reduction unit on conveyor headshaft

duction drive particularly for conveyor belt installations. In the illustration may be seen an installation mounted on a conveyor headshaft at the new crushed stone plant recently completed by Palmetto Quarries Co., Columbia, S. C.

Seven of these conveyors are operated by 5 hp., 1740 r.p.m. motors mounted on American motor bases which are said to provide automatic control of belt tension, keep average tension low, and thus assure added belt life. Directly on each conveyor's head shaft, without need for separate foundation, is mounted a reduction drive, providing a 13:1 speed reduction with high efficiency (friction losses not over 1.5 percent).



Heavy duty Diesel-electric switching locomotive meeting all I.C.C. requirements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WATER-TIGHT TRANSMISSION
Hauling rock and dirt through water above the hub caps . . . that's the work of the Koehring Dumptor on this job. Certainly no easy task, but the Dumptor was not stopped. The oil and dust-tight transmission is also water-tight as proven on this job. High speed production, time-saving operation . . . today, when production is most important . . . is an outstanding advantage of Koehring Dumptors. Other advantages are three speeds forward or reverse, easy and fast loading, instantaneous dumping. Every operation saves seconds, increases trips per hour, yardage per shift.
KOEHRING COMPANY
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KOEHRING
HEAVY DUTY
HEAVY-DUTY CONSTRUCTION EQUIPMENT

L. M. Hansen, past president, left, and the new president, J. M. Strouss

Meeting New Problems Arising From War

Priorities, conversion from oil to coal-burning, price regulation, plant capacity, and labor situation discussed at Chicago convention of Industrial Sand Association

WARTIME legislation and the problems attendant to conducting an essential business under emergency restrictions were the principal subjects up for discussion before the National Industrial Sand Association annual convention. Business meetings were held June 4 and 5 at Chicago's Palmer House. The convention had the usual good turnout plus some new faces to participate in open forum discussion that was highly informative. Everybody had an opportunity to ask questions and have them discussed and interpreted by the membership, its officers and those "in the know" in Washington.

J. M. STROUSS, vice-president and general manager of The Deckers Creek Sand Co., Morgantown, W. Va., was elected president to succeed L. M. Hansen, Industrial Silica Corp., Chicago. Mr. Hansen had served the association faithfully as president the past two years and was given a rising vote of thanks in appreciation for his good work.

T. C. MATTHEWS, Pennsylvania Glass Sand Corp., Lewistown, Penn., was elected vice-president, succeeding Mr. Strouss, and A. Y. Gregory is the new treasurer. V. P. Ahearn, executive secretary, and Stanton Walker, consulting engineer, with the board of directors, complete the slate that will conduct association affairs the coming year. The board is comprised of Hamilton Allport, Chicago, Ill.; E. J. Beyer, Rockwood, Mich.; Mark T. McKee, Detroit, Mich.; C. M. Hardy, Evansville, Ind.; G. A. Thornton, Ottawa, Ill.; and E. M. Durstine, Columbus, Ohio.

The "advisory" committee is now called the executive committee and is comprised of the three elected officers and the past presidents.

An active membership committee is to be appointed and a new scale of dues was adopted which will make it easier for the "low product value" producer to take membership. Dues will be based on dollar volume of business instead of on tonnage.

Priorities

E. W. BAUMAN, Mining Branch, War Production Board, spoke extemporaneously on priority matters and interpreted the rulings that govern in individual cases which were presented by the membership in the form of questions. In his opening remarks, Mr. Bauman commended the industry as a group for its important contribution to the war effort. He recognized the heavy responsibility placed on an industry, so small in numbers, in getting out the requirements for many war industries.

Mr. Bauman clarified certain provisions under P-56 and had a lot of questions to answer. The industrial sand industry is eligible to come under A-1-c quota ratings for emergency repairs, which can be then supplied with a minimum loss of time. Once a quota is established, to cover repair purchases, it will be difficult to have the quarterly quotas increased, he said. If a company has an established quota, an A-1-c rating is required to get repair parts even if an A-8 or an A-10 rating would get the materials in question. In the absence of a quota, it was suggested that A-8 or A-10 ratings might bring results.

One producer told of his inability to get tires, in a rural area where farmers are given preference, even though he was producing war materials. Mr. Bauman suggested that he attempt to get the tires from the pool which every State Administrator has. These pools represent 8 percent of the particular State's allocation for a certain period of time and do not carry over if unused. A certificate of necessity is required.

Conveyor belts are now considered as new equipment. Diesel tractors are frozen but according to Mr. Bauman, they have sometimes been secured where a strong case is pre-

Left to right: Louis Dill, Mrs. Mertie A. Dunkin, charming and successful industrial sand manufacturer, and George F. Pettinos, Jr.

Mr. and Mrs. Russell Manley

sented. His suggestion for that type of equipment and others is to try to locate the machine on the floor of a dealer and then make application for that machine. Used tractors and shovels are not frozen, but used compressors are. All rail over 35 lb. is frozen and cannot be sold unless released through the Railroad Branch. The freeze order on lumber has been amended to exempt mines coming under order P-56.

Extensions of electric wiring in a plant are considered new equipment and require an A-3 rating. Paper bags are classed as operating supplies and are being obtained with an A-8 or A-10 rating. Welding wire is classed under repair parts. Even an A-1-c rating is non-effective in getting the release of some alloy rods. The solution to that seems to be to use plain rod and more of it. One producer, in the East, who has a shortage of sand dryer capacity, told of purchasing two rotary dryers and then not installing them because the installation of more oil-burning equipment is prohibited. Coal was suggested as a substitute, but color contamination must be guarded against in the product. Evidently, the heat must be applied by indirect means.

The Mining Branch has moved its offices to 2360 Social Security building, 4th and Independence Aves., S. W., Washington, D. C. Mr. Bauman now has two assistants, Don Gotham, and James Bacon.

Louis McCrady, left, and Jack Cleary

Transportation Control

V. P. AHEARN outlined the provisions of orders ODT5 and ODT6 which are designed to conserve rubber. ODT5 covers the longer hauls and requires that a 75 percent return load be carried. ODT6, as now amended requires that mileage be reduced 25 percent on hauls of less than 25 miles and within cities. Both orders create impossible restrictions on some industrial sand producers.

In those cases, where actual stoppage of the delivery of vitally-needed materials is the result of the orders, it was suggested that deliveries be continued for the time being, until further inquiry be made by the Association officials. Mr. Ahearn strongly recommended that the industry live up to the spirit of the orders in every way possible. If deliveries by a company can be shifted from truck to rail haul, that should be done, he said. He suggested that tire conserving rules and regulations be provided the employes. Trucks, if absolutely needed, should be purchased without delay.

J. F. Putnam, left, with P. W. Palmer, a new member of the association

Member companies reported that there have been no persistent car shortages so far. There will be an apparent trend toward heavier car loadings. The Association has been very active in its efforts to modify Ex Parte 148, covering "Increased Railway Rates, Fares and Charges, 1942." It went on record as opposed to the percentage method of advance for industrial sand and asked that any increase be applied by adding a flat amount in cents per ton to present rates.

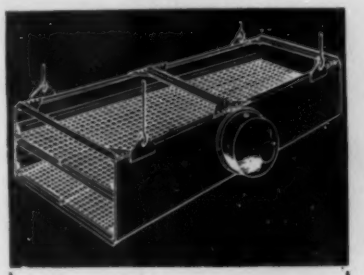
(Continued on page 84)

FARREL BACON CRUSHERS

Complete plants designed and equipped, including Screens, Elevators and Conveyors. Machinery for Mines and Rock Quarries, Sand and Gravel Plants.

Engineering Service

EARLE C. BACON, Inc.
17 John St., New York, N. Y.



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VIBRATING SCREEN

5 DISTINCTIVE FEATURES . . .

1. Full Floating Shaft.
2. Eight Positive Stroke Adjustments (quickly changed).
3. Oil Lubricated.
4. Sturdy Construction.
5. Screen Cloth Easily Changed.

★

LOW COST—EFFICIENT—ECONOMICAL

Write for Bulletin No. 939

Productive Equipment Corp.
2926-28 West Lake St., Chicago, Ill.

PRICES

By ABRAM F. MEYERS†

Maximum Price Regulation As Applied to Lime Industry

THE EMERGENCY PRICE CONTROL ACT approved January 30 and the Price Control Regulations issued April 28, 1942 represent an effort by the United States to stabilize prices for the duration. No one will question the Government's right to adopt such measures, or the propriety of the regulations as far as they go. Much has been made of the fact that this is the first time a general price ceiling has been established in this country. But not enough has been said about the fact that this is the first time any country has undertaken to put a ceiling on prices without at the same time stabilizing the largest single item of cost of virtually all commodities—wages. Stabilizing prices without at the same time stabilizing wages is like playing poker with all but the face cards wild. Obviously, it is going to be difficult for a manufacturer to stick to his March prices if in June he must raise wages.

The Government has not been unaware of this defect in its price control scheme. It just has not seen fit to deal with labor with the same heavy hand that it lays on industry. Confidence is expressed that labor can be induced to do by voluntary action what industry is required to do by law. Labor has been beseeched to forswear strikes for the duration and encouraging responses have been received. The American Federation of Labor has indicated a willingness voluntarily to freeze the July (1942) wages in essential industries, subject to adjustment whenever it appears that the frozen wages are out of line with prevailing wages. The assurances given and the further assurances being sought do not extend to the production of goods not rated as essential, although such goods are covered by the price control act. Neither will they provide against the consequences of competitive bidding between manufacturers for a share of the dwindling labor supply. It is fair to say that the Government has no wage policy today. Only a confirmed optimist will contend that the price control scheme in its present form has any firmer foundation than the capacity and willingness of labor to practice moderation and self-restraint.

This is the danger point that needs to be watched. If labor can resist the temptation to capitalize on its exemption from the price control regulations, the scheme will work and the battle of the home front can be won. But if labor insists on a rising spiral of wages, if labor refuses to share the common lot, then the system will surely collapse. The expedient of granting subsidies to industries caught between the millstones of fixed prices and rising wages runs counter to the very purpose of the Emergency Price Control Act and will only hasten the downfall of the system. Government price control will work only when all factors contributing to prices are under either legal or voluntary control. And anti-inflation measures can be extolled as democratic only when they bear equally on all classes. A scheme that cuts one class of citizens to the bone while affording another class the opportunity to improve its lot is not a proper war measure; it is a reformer's pipe dream of redistributing wealth in the guise of a war measure.

APPLIES GENERALLY

● *WHILE specifically addressed to the lime industry, Mr. Meyers' interpretation should fit all the rock products industry equally well.*

—THE EDITOR.

* * * * * * *

The regulation provides that no person shall sell, and that no person "in the course of trade of business" shall buy or receive, any commodity at a price higher than the maximum price therein provided. The maximum price, as already stated, is the highest price which a seller charged for a commodity delivered by him during March, 1942. By this you will note that no uniform price is prescribed for any commodity; the ceiling price of any seller is the highest price for which he sold and delivered the commodity during the basic period. But what about the seller who did not have any transactions in the commodity during March? He must adopt as his ceiling the highest price for "the similar commodity most nearly like it." And in case the seller did not deal in the same or similar commodities during March, then he must observe as his ceiling the highest price charged during the month by the "most closely competitive seller of the same class" for the same commodity, or, if no charge was made by such competitor for the same commodity, then the charge made by him for "the similar commodity most nearly like it." For the peace of mind of this audience, I hope that all of you had completed transactions at a fair price for all of your products during March.

However, I have not yet fully covered the intricacies of the maximum price. To provide against washed sales the regulation requires that the highest price during March, in order to qualify as the maximum price for a seller, must have been charged "for a commodity delivered during March, 1942;" or, if the seller made no delivery during the month in question, then the price must be his highest offering price for delivery during that month." The word "delivered" is complied with if during March the commodity was received by the purchaser or by any carrier. A price charged for a commodity sold in March but not delivered until April would not qualify under the provision in question. However, in the absence of a price covering a completed transaction, a seller may rely on his *bona-fide* offering price for delivery during March. Sellers having a price list will have no difficulty on this score; others may have to prove that their ceiling prices are those regularly quoted in some manner other than by a price list.

The regulation also contains provisions designed to prevent evasions by changes in customary pricing

* Abstract of a paper presented at the 24th Annual Convention, National Lime Association, May 28, 1942.

† Counsel to National Lime Association, Washington, D. C.

practices. Thus it is provided that no seller may change his customary allowances, discounts, or other price differentials unless such change results in a lower price. (Perhaps I should interpose at this point that the regulation graciously provides that "lower prices than those established (hereby) may be charged, demanded, paid or offered.") Thus it results that the highest price charged during March, in order to serve as a ceiling price, must be a price charged "to a purchaser of the same class." "Purchaser of the same class," according to the definition, "refers to the practice adopted by the seller in setting different prices for commodities for sales to different purchasers or kinds of purchasers (for example, manufacturers, wholesaler, jobber, retailer, government agency, public institution, individual consumer) or for purchasers located in different areas or for different quantities or grades or under different conditions of sale." Also it is provided that "no seller shall require any purchaser, and no purchaser shall be permitted, to pay a larger proportion of transportation costs * * * than the seller required purchasers of the same class to pay during March, 1942 * * *."

* * * * * * *

Increased Tax Cost

If during March a manufacturer had an established practice of making allowances, discounts, or price differentials to different classes of purchasers, and raised his general level of prices, but thereafter during March he made no delivery to any purchaser of a particular class, he shall, for that particular class of purchasers "calculate the highest price charged by taking the highest price charged during March, 1942, to a purchaser of another class and then adjusting such price to reflect his established allowances, discounts, and price differentials." That sounds complicated but on analysis it merely means that if during March you sold a bill of goods to a dealer and did not make a sale to a consumer, you would calculate the latter's price by adjusting the price differentials. It seems unlikely that any lime manufacturer will be called upon to quote a maximum price on any commodity which can not be priced by the methods thus far discussed—at least I hope not. Such commodity would probably be a new development not on the market in March. The pricing of such commodity by a manufacturer would have to be by specific authorization of the Office of Price Administration.

In the matter of passing on Federal and State taxes to the purchaser, the regulation is quite specific. As regards any tax upon the sale of a commodity, or any compensating use tax on a commodity, if in effect during March, the regulation provides as follows: If the seller customarily stated and collected such tax separately and apart from the selling price during March, the seller may not include the tax in determining his maximum price, but may collect the tax in addition to the price. But if the seller did not customarily collect such tax as a separate item during March, he may include such tax in determining his maximum price and in such case may not add it as a separate item. As regards a tax which becomes effective subsequent to March, 1942, if the statute or ordinance levying the same permits or requires the seller to state and collect the tax separately from the price paid by the purchaser, and the seller does so separately state it, he may collect the tax in addition to his maximum price.

It is obvious that in order to justify

COLMONOY SAVES VITAL METALS

The Pug Knives shown above tell a graphic story of the unusual wear resisting qualities of COLMONOY hard-surfacing alloys and overlay metals.

1. **New, 24 lb. pug knife, made of high alloy steel.**
2. **and 3. Same type, after only 3 months of service. Worn beyond efficient operation, with loss of over half of blade material.**
4. **and 5. Same type. Each blade coated with 1½ lbs. of COLMONOY No. 6. In constant use for over a year, and still operating efficiently.**

COLMONOY alloys are playing a vital part in the Rock Products industry. Use them on parts subject to great wear—drag buckets, dipper teeth, hand shovels, conveyor screws, gudgeons, pulverizing hammers, clinker plows and other parts that have tough going.

Write for Full Information

WALL-COLMONOY CORP.

Buhl Building, Detroit, Michigan

Branch Offices

NEW YORK CITY, BLASDELL, N. Y.; CHICAGO; TULSA; WHITTIER, CALIF.

Other branches in Canada

COLMONOY

Hard Surfacing Alloys and Overlay Metals

the prices charged for a commodity a seller must be able to prove that such price does not exceed the maximum permissible under the regulation. Therefore, records become of great importance. Section 11 of the regulation requires that every seller of commodities for which maximum prices are established shall preserve for examination by OPA all his existing records relating to prices which he charged for such of those commodities as he delivered during March, and his offering prices for the delivery of such commodities during that month. Also that every such seller prepare, on or before July 1, 1942, on the basis of all available information and records, and thereafter keep for examination by any person during ordinary business hours, a statement showing

(1) The highest prices which he charged for such of those commodities or services as he delivered or supplied during March, 1942 and his offering prices for delivery or supply of such commodities or services during such month, together with an appropriate description or identification of each such commodity or service; and

(2) All his customary allowances, discounts, and other price differentials.

Any manufacturer who claims that substantial injury would result from making such statement available to any other person may file the same with OPA, where the information will be treated as confidential unless to do so would be contrary to the purpose of the regulation.

In addition to the records harking back to March, the regulation provides that every seller of commodities covered thereby shall keep, and make available for examination by OPA, records of the same kind as he has customarily kept, relating to the prices which he has charged for such of those commodities as he has sold after the effective date of the regulation; and, in addition, records showing, as precisely as possible, the basis upon which he determined maximum prices for those commodities. In this connection, I would suggest the advisability of noting, in connection with each current transaction, the transaction in March which established the ceiling price for the particular commodity to the same class of purchaser. Such notation on the duplicate invoice or other record would enable the seller quickly and conclusively to justify any price charged.

. . . . . .

From the foregoing you will perceive that the purpose of the regulation is not merely to freeze the prices prevailing during the basic period (March, 1942), but also to freeze selling terms, conditions, and practices insofar as they have a bearing on prices. The regulation, for all its pretense of originality, is fashioned very largely after the price control measures of Canada; and the latter, for all we know, may have been patterned after examples in other parts of the British Empire. It can not, therefore, be said to be something new under the sun. I recently visited Canada to study its price control system and wish our Government could have adopted a system as complete and as simple as theirs. However, barring the possibility that wages may get out of control, there is no reason why our system should not succeed in its main objectives. Much will depend upon the attitude of the enforcement officers. If they exhibit the same grasp of business fundamentals reflected in the regulation, and proceed in a sensible fashion, their ministrations will be consoling.

Unusual Idea

Some users cut one or more V-shaped slots into the lip of the chute, where it feeds material in the same direction the belt is running. These cut-outs permit fine material to drop on the belt before the big rocks reach the end of the chute. To allow these "fines" to pass under the lip of the chute, the drop from the end of the chute is set a little higher than usual. In this way, a cushion of fine material breaks the impact and abrasion of the big jagged rocks sliding down from the hopper.

Your
BELTING IS HARD TO REPLACE–MAKE IT LAST

FUNDAMENTAL CARE

A man should be appointed in every quarry and aggregate plant to make Periodic Inspections. He should be responsible for inspecting such items as belt joints, checking lubrication work, need for cleaning around conveyors and walkways, removal of dust from under idlers and pulleys, bearing adjustments, belt training, and need for special repairs.

A little extra trouble now will put off the day when you must order a new belt out of the nation's dwindling stockpile of rubber. If you are one who insisted on the best quality when belts were plentiful, you will appreciate more than ever the longer life that is built into Goodall Conveyor Belts.

GOODALL KNOWS SYNTHETICS

Ever since Synthetic Rubber was commercially introduced, Goodall has been a foremost compounder of this man-made rubber. Today, we are "batching" five of the basic synthetic rubbers for everyday production runs in our factory. When new synthetic and plastic substitutes become available, Goodall-Whitehead chemists and technicians are ready with the precise formulas, timing and control techniques so necessary for safe, dependable products.

PHILADELPHIA NEW YORK BOSTON
TRENTON PITTSBURGH CHICAGO
GOODALL RUBBER CO. OF CALIFORNIA
GOODALL RUBBER CO. OF TEXAS

Mill: Trenton, N. J. (Est. 1870)—72 Years of "Know-How", Our Most Valuable Commodity.

GOODALL
RUBBER COMPANY, INCORPORATED

F.W.A. Appointments

REID W. DIGGES has been named Special Representative of Brig. Gen. Philip B. Fleming, Federal Works Administrator for the area east of the Mississippi River and B. FRANK BENNETT to a similar position for the area west of the Mississippi. They will represent the Administrator on Vital Area Boards and will report direct to the Administrator on national policy, programs, planning and procedure. Mr. Digges' headquarters will remain in Washington, D. C., and Mr. Bennett will be in Kansas City, Mo. These new Vital Area Boards will examine all new projects and some of the more than 1400 recently ordered reexamined in the light of the acute critical materials situation. Projects found to be indispensable in the prosecution of the war will be recommended for priority ratings of A-1-J or better to assure prompt completion. When organized, these boards will include the FWA Regional Director and representatives of the War and Navy Departments, the Maritime Commission, Federal Security Administration and the National Housing Agency.

Cement Production Up

BUREAU OF MINES reports that the portland cement industry in April, 1942, produced 14,068,000 bbl., shipped 14,774,000 bbl. from the mills, and had in stock at the end of the month 25,125,000 bbl. Production and shipments of portland cement in April, 1942, showed increases of 15.3 and 4.5 percent, respectively, as compared with April, 1941. Portland cement stocks at mills were 4.4 percent higher than a year ago.

Sand-Lime Brick

FOUR active sand-lime block and brick plants reported for May and six for April, statistics for which were published in June.

AVERAGE PRICE FOR MAY

	Plant Price	Delivered Price
Sebewaing, Mich.	....	....
Saginaw, Mich.	$12.00	....
Grand Rapids, Mich.	....	$15.00* 30.00**
Seattle, Wash.	16.50	18.50

* Single brick
** Double brick

STATISTICS FOR APRIL AND MAY

	*April	**May
Production	1,527,916‡	1,624,000‡‡
Shipments (rail)	15,000	290,000
Shipments (truck)	1,322,345‡	1,336,970‡‡
Stock on Hand	1,163,574‡	710,000
Unfilled Orders	350,000	1,850,000

* Six plants reporting: incomplete, one not reporting stock on hand and four not reporting unfilled orders.
** Four plants reporting: incomplete, one not reporting stock on hand and one not reporting unfilled orders.
‡ Includes block.
‡‡ Includes double brick.

190,000 Tons of Aggregates Pumped in 1941 by 8-inch Amsco pump with Minimum Repairs

The Dallenbach Sand & Gravel Company, Milltown, New Jersey, producers of commercial concrete aggregates, enthusiastically commend the satisfactory performance of their Amsco Dredge Pump equipment. 190,000 tons of deposit materials were excavated during the 1941 season, of which 150,000 tons of sand and 15,000 tons of gravel were saleable and the balance wasted. An 8" Amsco, Type "M", Form 30, heavy duty dredge pump, directly connected to a 100 H.P., General Electric, 580 R.P.M., slip ring motor, is used for production. The average discharge pipe line is 500 feet, together with 30-foot terminal lift at the shore plant emptying position. Two years' results establish about 100 tons an hour average production, a commendable performance in that only a plain suction line is used and some areas of the deposit are tightly compacted.

Should future field conditions warrant longer discharge pipe line lengths coupled with higher head pump characteristics, the equipment is designed for ready adaptation of an Amsco "COUNTERFLOW" water end in conjunction with using a larger motor of 150 H.P. size at 705 R.P.M.

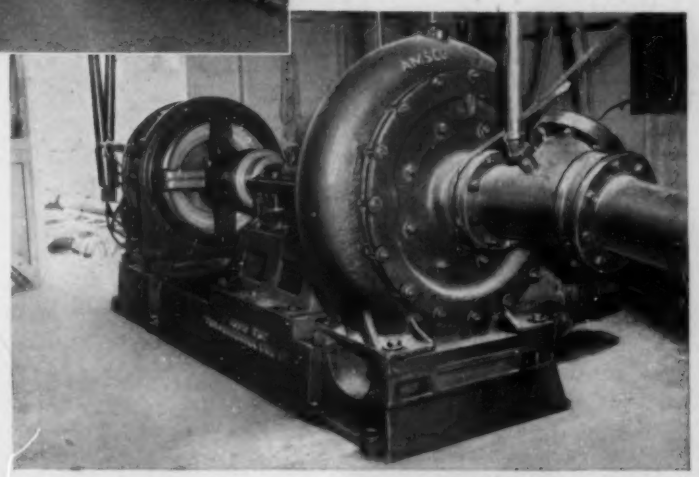
Continuous use of this equipment has demonstrated a minimum cost of maintenance parts and labor, together with optimum productive operating hours. Similarly, Amsco Dredge Pumps in hundreds of installations, over many years, have given satisfactory service, under every kind of working condition, at lowest cost per ton of material handled. Amsco Pumps evidence their ability to stand up when being pressed the hardest for production. It is thus that they have proved their superiority as users of Amsco Pumps will tell you.

Made of genuine 13% manganese steel throughout the water end, including the shell, impeller, side plates and liners, Amsco Dredge Pumps insure utmost resistance to impact and abrasion.

They embody sturdiness with rigidity of construction; heavily proportioned shafting and bearings; accessibility and quick, positive impeller adjustment; easy replacement of wearing parts; simple lubrication; highest maintained efficiency; and remarkably high capacity handled against high heads.

The toughness and wear hardness of Amsco Manganese Steel make it ideal, also, for Rotary Cutters; and Dredge Pipe Line Fittings such as elbows, pipe, nipples, reducers, expansion joints, hose nipples, and flap valves.

Send for bulletins showing various types of pumps for sand and gravel production, rotary cutters and material handling pipe line fittings.



Amsco
AMERICAN MANGANESE STEEL DIVISION
OF THE AMERICAN BRAKE SHOE & FOUNDRY CO.
Chicago Heights, Illinois

Manganese Steel Castings for shocks and abrasion.
Chromium-Nickel Alloy Castings for heat and corrosion resistance.
Power Shovel Dippers. Dredge and Industrial Pumps.
Welding Materials for reclamation and hard-surfacing.

FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO. OFFICES IN PRINCIPAL CITIES

FINANCIAL NOTES

RECENT DIVIDENDS

American Agri. Chemical 4% pfd. Init.	$ .30	June 30
Arundel Corp.	.25	July 1
Basic Refractories	.10	June 15
Calaveras Cement Co. 7% pfd. Acc.	.75	June 18
Ideal Cement Co.	.35	June 30
Industrial Silica Corp. 6½% pfd. (p100) (arrears)	1.62½	June 10
Internat. Minerals and Chem. Corp. 4% pfd. (p100)	1.00	June 30
Kelley Island Lime & Transp. Co. Q.	.25	June 30
Lone Star Cement Corp. Q	.75	June 30
Longhorn Portland Cement Co. Com. (np)	.50	June 15
Pacific Coast Aggregates, Inc.	.03	June 20
Pennsylvania Glass Sand Corp. Q	.25	July 1
Pennsylvania Glass Sand Corp. pfd.	1.25	July 1
Superior Portland Cem. Inc. $3.30 Class A	.82½	July 1
Yosemite Portland Cement Corp. pfd.	.10	July 1

•

INTERNATIONAL MINERALS & CHEMICAL CORP., Chicago, Ill., recently voted an appropriation of $525,000 for additions and improvements at the Union Potash properties at Carlsbad, N. Mex. It is understood that about half of the money will be used for enlargement and improvement of the power plant and the rest will be for new mine and plant equipment.

•

NEW ENGLAND LIME CO., Adams, Mass., reports the following income account for the years ended December 31:

	1941	1940
Net sales	$583,592	$502,054
Cost of sales	454,511	385,708
Oper. expenses	99,701	101,970
Depreciation, depletion, etc.	32,087	27,908
Operating loss	2,708	13,532
Other income	82,195	40,645
Total income	79,487	27,113
Interest	48,429	.....
Other deductions	3,837	.....
Federal taxes	8,700	5,200
Net income	18,521	21,914
①Times int. earn.	1.56	.....
Earn., pfd. share	$23.93	$1.90
No. of pfd. shares	774	11,536

① Before Federal taxes.

•

THE WARNER CO., Philadelphia, Penn., has submitted to its bondholders a plan for extension of its outstanding first mortgage 8% sinking fund bonds from April 1, 1944, to April 1, 1951, at the present annual interest rate of 6%. If the plan is accepted by 90% of the bondholders, the company would distribute $90 in cash on account of accrued and unpaid interest and plans to pay off the remaining $90 accrued and unpaid interest as rapidly as earnings permit. The company has reported a steady improvement in profits in the past three years, net earnings rising from $103,928 in 1939 to $292,052 in 1940 and to $1,130,311 in 1941. It is reported that for the first quarter of the current year gross earnings increased nearly 87% over the like period of 1941.

•

PACIFIC COAST CEMENT CO., Seattle, Wash., has called for redemption its 1st A 6s, 1942, due June 1, 1942 at 101.

•

PEERLESS CEMENT CORP., Detroit, Mich., reported a net deficit of $92 for the first quarter in 1942 as compared with a net income of $17,909 for a like period in 1941.

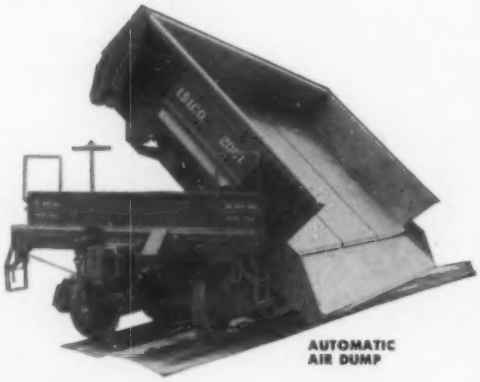
•

PACIFIC COAST AGGREGATES, INC., San Francisco, Calif., showed a net profit of $123,907 for the three months ended March 31, 1942. For the same period in 1941, the company reported a deficit of $832.

P.S.C CARS

Speed Up War-Time METAL MINING

• With sturdy, high capacity P.S.C. Cars on the job, there are no frequent time-outs for repairs or over-hauling. These sturdy, quick clean-dumping cars are designed and built to withstand the rigors of wartime's triple shift production.



Modern operators everywhere are maintaining uninterrupted production all down the line—filling, hauling, dumping—with P.S.C. Cars.

Our Bulletin 71 describes the complete line of P.S.C. Cars—do you have a copy in your files?

P.S.C

PRESSED STEEL CAR CO., INC. • PITTSBURGH, PA.
(INDUSTRIAL DIVISION)

MONOLITH PORTLAND MIDWEST CO., Los Angeles, Calif., had the consolidated income report for the years ending December 31:

	1941	1940
(1) Operating profit.	$294,092	$151,635
Other income	7,793	2,549
Total income	301,885	154,184
Interest, etc.	2,968	12,622
Fed. income taxes.	92,878	26,098
Depletion approp...	(3) 50,000	.....
Net profit	156,039	115,463
Preferred divs.	53,313	51,431
Surplus for year...	102,726	64,032
Earn. surp., 1-1...	282,383	140,333
Adjustments	(4) 200,000	(2) cr 78,018
Earn. surp., 12-31..	185,109	282,383
Earn., pfd. share...	$0.88	$0.56
(3) Earn., com. sh...	0.05	d 0.16
No. of pfd. shares..	177,299	205,724
No. of com. shares.	300,000	300,000

(1) After depreciation: 1941, $93,447; 1940, $91,870; and depletion: 1941, $13,818; 1940, $12,048.

(2) Includes $66,471 depreciation and depletion adjustment.

(3) Disregarding preferred arrears.

(4) Appropriation to reserve for depletion and valuation of limestone deposits.

•

CONSOLIDATED CEMENT CORP., Chicago, Ill., had a net profit of $29,011 for the three months ended March 31, 1942, as against a deficit of $8,490 for a like period in 1941. Net sales for the first three months in 1942 were $522,977 as compared with $405,211 in the first quarter in 1941. Net profit for the year ended December 31, 1941, was $86,392 as against $123,607 for 1940. This is a reflection of much higher taxes because sales were $538,018 greater in 1941.

•

ALPHA PORTLAND CEMENT CO., Easton, Penn., had the following statement of earnings for the twelve months ended March 31:

	1942	1941
Net sales	$10,453,003	$8,053,854
Oper. expenses ...	7,494,166	5,781,184
Deprec. & deplet..	990,248	970,400
Operating income .	1,968,589	1,302,269
Profit secur. sold..	1,559	11,719
Other income	60,056	46,686
Total income	2,030,203	1,360,675
Income charges ..	33,451	28,039
[1] Fed. income tax.	602,944	294,120
Net profit	1,393,808	1,038,516
Dividends	1,268,180	957,875
Surp. for period..	125,628	80,641

[1] No liability incurred for excess profits tax.

•

KELLEY ISLAND LIME & TRANSPORT CO., Cleveland, Ohio, had a gross profit of $730,168 for the year ended December 31, 1941 as compared to $610,912 for a like period in 1940. Net sales in 1941 were $4,566,670 as against $3,952,697 in 1940.

•

NORTH AMERICAN CEMENT CORPORATION, New York, N. Y., reported a net income of $185,238, after taxes and charges, for the twelve months ended March 31, 1942.

Move Equipment

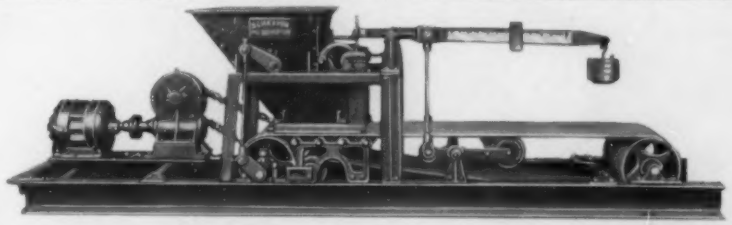
VERNON MICHAEL, who formerly operated a sand and gravel plant at Foster, Ohio, has moved his equipment and set up a plant at a site near Loveland, Ohio. In addition to his regular equipment, Mr. Michael recently acquired an International Tractor shovel.

Open Quarry

COLUMBIA FOUNDATION CO., Columbia, Tenn., opened a new quarry and agricultural limestone plant 2½ miles northwest of Columbia. This company also has plants for the production of ready mixed concrete and bituminous mixes. J. D. Spears is the owner; G. E. Pinkston is quarry superintendent; and J. N. Rigg is office manager.

Buy Quarry Land

TALBERT CONSTRUCTION CO., Centerville, Iowa, has leased additional land west of Hopkins, Mo., for a quarry. Present quarry operations are 50 ft. deep and range from 100 to 300 ft. wide.



When you think
WEIGHING—
Think POIDOMETER

The name "Schaffer Poidometer" has become the standard for weighing and proportioning raw and finished materials. For twenty-five years Poidometers have stood at the top for performance, reliability, accuracy and sturdiness.

It is the most accurate and durable weighing and feeding machine on the market. Buy Poidometer and you buy assured production.

GOOD EQUIPMENT *Deserves* GOOD CARE

To the vast number of Poidometer users we bring this message: It will more than pay you to keep your machines up to the pink of condition. Check every part of your Schaffer Poidometer. Any part that shows wear or needs replacing should be ordered now. Your Poidometer will serve you best if you keep it in top condition.

Write for Catalog No. 2

SCHAFFER POIDOMETER CO.
2828 SMALLMAN ST. PITTSBURGH, PA.

Ready Mix Directors

(Continued from page 63)

tions to ready-mixed concrete on the part of large users, chief of which is the lack of scientific control of consistency. Some of the things that will be considered in such a code are:

(1) Concrete design and material control: (*a*) selection of materials (gradation and classification); (*b*) handling graded aggregates (up to the point of batching); (*c*) design of mixes.

(2) Batching plants and batching control: (*a*) location and arrangement; (*b*) size and type; (*c*) determination and compensation for moisture content of aggregates; (*d*) central plant water systems; (*e*) batching by volume or weight; (*f*) heating of aggregates; (*g*) heating of water for cold weather concreting; (*h*) ribbon loading—stratified loading; (*i*) holdover batches; (*j*) use and disposal of flushing water.

(3) Water control: (*a*) control of added mixing water; (*b*) "sweetening" or tempering the batch; (*c*) operation and inspection of truck mixer water systems; (*d*) operation of central plant water tanks; (*e*) use of flushing water for mixing purposes.

(4) Mixing control: (*a*) mixing time vs. time in transit; (*b*) mixing speed and revolutions required at various speeds—high, then low, rather than medium; (*c*) agitating speed, separate engine vs. truck engine; (*d*) under mixing and over mixing; (*e*) overloading (control of batch sizes) —rocking the drum and "shrink" loading; (*f*) water control; (*g*) shrink mixing; (*h*) agitating; (*i*) recording and locking devices—mixing time, mixing speed, prevention of discharge.

(5) Discharge control: (*a*) straight discharge; (*b*) controlled discharge; (*c*) intermittent discharge (reversing drum to prevent segregation); (*d*) prevention of segregation during discharge; (*e*) discharge door closure.

(6) Inspection and control of mechanical equipment; (*a*) condition of drum blading; (*b*) condition of mixing drum; (*c*) condition of charging and discharging doors; (*d*) water tank, gauges, valves, pump; (*e*) power —engine governor to assure desired speeds; (*f*) general physical condition of equipment—maintenance and lubrication.

The new committee will comprise both producers and machinery manufacturers—and from the outline submitted and the ensuing discussion it appears that it will lack neither ideas or work to be done.

TWO WAYS TO AVOID DELAYS
1 PROPER INSTALLATION
★ Keep orders moving by keeping equipment in tip-top condition—inspect sheaves, drums, pulleys and wire rope more frequently. And install the satisfying quality wire ropes for longer-lasting service—Union Wire Ropes.
2 and PROPER UNION WIRE ROPE
★ There is a Union Wire Rope to fit every service requirement—correctly and economically. See the Union Wire Rope man in your territory for a full analysis of your equipment needs. Or write for complete information.
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WRITE FOR
ROPE DOPE
This educational wire rope bulletin will be mailed to you without charge.
UNION Wire Ropes
The "ULTIMATE LOW COST WIRE ROPE"
3-42

Must Pay for Employe's Committee Time

TIME spent by an employe as a voluntary member of a labor-management committee is compensable when meetings are held during his regular working hours, but not when meetings are held at other times, according to a new regulation issued by the Wage and Hour Division, U. S. Department of Labor.

Fires

SAFETY VAULT CORPORATION, Cleveland, Ohio, had a disastrous fire recently in its concrete vault factory. E. C. Jefferies is president.

Concrete Pavement Yardage

AWARDS of concrete pavement for May, 1942, have been announced by the Portland Cement Association as follows:

	Square Yards Awarded During May, 1942
Roads	3,267,021
Streets and Alleys	1,394,367
Airports	9,800,318
Total	14,461,706

Priorities

(Continued from page 48)

new machines, and that was an A-3 rating. Now we can give any rating that is necessary to get that machine, provided you can prove that that equipment is necessary for the total overall war effort, and that your plant is the place where that machine can do the most good.

In discussing new machinery it is necessary to go into the whole overall war picture and to discuss the making of mining machinery, which means a discussion of our other order known as P-56a. This order permits the makers of mining machinery working under it to get their advance requirements on a quarterly basis, on an A-1-a rating. To go into details in this matter I should say that each maker of mining machinery fills in a form known as PD-25A listing item by item his advance quarterly requirements of raw materials and fabricated articles. We have taken all of the articles listed on this Form PD-25A by each maker of mining machinery operating under Order P-56a and have totalled them together. Based upon these data, we were fortunate in obtaining Determination No. 20 from Mr. William Batt's Requirements Committee, which states that the total needs of these makers of mining machinery for the second quarter of this year should be furnished them, as it was essential that the manufacture of mining machinery be continued.

This Determination No. 20 was supplemented a few days later by a letter from Mr. Knowlson, in charge of Industry operations, to Mr. Batt, in which he said that the raw material requirements of the makers of mining machinery should be filled on an A-1-a rating, and that where there were any limitation orders stating that only a certain percentage of an order should be filled, such limitation order would not apply to any of the requirements of the makers of mining machinery.

An example of how this works can best be shown, I think, by referring to copper. In the Copper Branch, everyone who has ordered any copper in recent months has been given 80 or 60 percent, let us say, of what he ordered. That was just a definite scaling down of all such orders because they did not have enough copper to go around. But in the case of a maker of mining machinery, he would get 100 percent of what he ordered under the amounts which he had asked for when he filled in PD-25A.

(Continued on page 86)

Amsco Dipper Made in 1925 Still On Job in 1941

In 1925 the 1 yd. Amsco Missabe Dipper with Vanderhoef design front, pictured here, was made for use on a Link-Belt shovel. Sixteen years later, when this picture was taken, it was still on the job—this time in a California quarry.

This veteran of many jobs of brutal digging and loading was still in good condition as the photograph attests. There *were no cracks, though the front at the heel was worn from an original thickness of 1⅛" to ½".* This record of accomplishment which includes thousands of yards of rock dug on the famous Skyline Drive at Lake Arrowhead, California; rock, sand and dirt handled on the Colorado River Aqeduct and other Western operations, bears out the testimony of a host of shovel owners and operators that "manganese steel dippers last and last and last—and their durability is most conspicuous on the hardest jobs."

Such a long and profitable life is possible because 13% manganese steel resists impact and abrasion to a remarkable degree. Eliminating "down" time and saving metal is more vital than ever in these grim days of war. Less time is lost through making repairs—metal is conserved by the infrequency of replacements. Besides, Amsco design gives you fast full loading and clean dumping—and never before has speed been at such a premium.

When your equipment is subject to abrasion and impact, Amsco engineers and metallurgists will assist you in adapting Manganese Steel to your needs. The nation needs its long-wearing, trouble-free service, and so do the producers of essential materials.

Amsco
AMERICAN MANGANESE STEEL DIVISION
OF THE AMERICAN BRAKE SHOE & FOUNDRY CO.
Chicago Heights, Illinois

Manganese Steel Castings for shocks and abrasion.
Chromium-Nickel Alloy Castings for heat and corrosion resistance.
Power Shovel Dippers. Dredge and Industrial Pumps.
Welding Materials for reclamation and hard-surfacing.

FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO. OFFICES IN PRINCIPAL CITIES

Industrial Sand

(Continued from page 75)

The ten percent increase sought by the carriers has been reduced to 6 percent as a maximum on any commodity and certain so-called basic commodities were listed for a three percent advance. The wording of the order made "sand (other than glass or molding)" subject to three percent increase and all other sand subject to 6 percent. Supplement I to the tariff limits the three percent increase to "sand, common, in uncovered open-top cars." Petitions of the Association and the Glass Container Association were denied on May 9, but opposition will be continued to rates that are considered unfair to box-car loadings and molding sand.

Price Regulation

Executive Secretary Ahearn discussed the General Maximum Price Regulation at length, as established by OPA, to control prices. Under the regulations, the highest price charged during March, 1942, cannot be exceeded after May 11, according to the original draft of the rules. This applies for the same or similar commodities or services sold to a purchaser of the same class. Exceptions to the provisions will be hard to get and the fact that labor rates may go up will not necessarily constitute a case for price increases, said Mr. Ahearn. He emphasized that the regulations are not a price freezing order; that a distressed price charged during March need not be continued unless that price was the highest charged in that month.

In the case of a producer just completing a new plant from which no sand was sold in March, it was pointed out that the prices of the closest competitor will have to be adopted. If there was an offering price in March, though no sand was sold or delivered, the offering price would govern. If similar grades of sands should be sold at a certain price for foundry purposes and at a lower price for building, the sand would be considered as coming under two classes, for the purpose of price establishment.

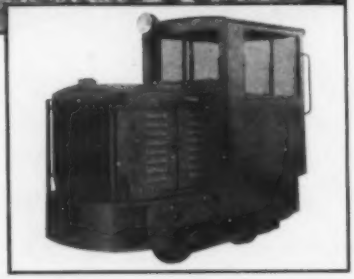
If a large contract is still being filled through the effective date and the price is higher than the highest charged in March for sand in the same category, sand delivered after the date set will have to revert back to the top March price, according to the interpretation. In such an instance, material in the hands of the carrier by midnight before the effective date is not subject to the price reduction.

Mr. Ahearn pointed out that in cases where a company has several plants, each plant must be considered as an individual seller within the meaning of the law. When the sand is sold f.o.b. plant, increased delivery charges will pass on to the customer. The customer will also stand the increase due to raised transportation costs, if quotations break down prices into the charge for sand, the transportation charge, etc. In the case of delivered prices quoted, without such a breakdown, the seller must absorb the increase as was ruled in the case of the portland cement industry.

Taxes

Several sand producers have been prevailed upon to build necessary new plants and major increases to capacity, which present a taxation problem. A certificate of necessity must then be authorized by the army or navy and be approved by the Tax Amortization Division of the Department of Revenue to permit the computation, for tax purposes, of ac-

CONGRATULATIONS to the CEMENT INDUSTRY for its brilliant performance in producing vital materials . . .



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KEEPS UP THE PACE FOR MORE PRODUCTION

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PLYMOUTH GASOLINE and DIESEL LOCOMOTIVES

PLYMOUTH LOCOMOTIVE WORKS

Division of The Fate-Root-Heath Co. PLYMOUTH, OHIO, U. S. A.

celerated rates of depreciation and depletion. The opinion was expressed that the plant, or plant expansion, could be written off as soon as three years, when it is established that the facilities are surplus and have no value to the company after the war purpose for which they were put in is over. It is not necessary to have prime contracts to be eligible for the accelerated write-off. One producer said that he computes depreciation and depletion based on daily hours of operation. A power shovel, for instance, that would be written off in 10 years at 10 hr. daily operation would be depreciated much earlier on 24 hr. daily service.

Labor

There were no outstanding events in the field of labor relations to report. There apparently will be a critical shortage of labor soon. Mr. Ahearn emphasized that there will be no blanket deferments of men from the Selective Service Act. The manpower board recently formed will make recommendations to local draft boards but the power of decision in individual cases will still be vested in the latter.

Legislation

In the absence of Theodore Waters, legal counsel, Mr. Ahearn read a brief letter from him summarizing events in legal matters of direct interest to the membership. In New Jersey, there has been a joining of hands to make silicosis and asbestosis cases compensible. An amended Bill, that will be supported by labor, has already passed the State Senate. In New York State, work will soon start on a code for the ceramic industry. Industrial sand producers will be represented on the committee. The New York Foundry Code became law early this year.

Research

One of the most active phases of Association activity, research, will be restricted for the duration of the national emergency. Contemplated studies of a general nature will be shelved, but work is to continue on studies now under way and will be initiated on certain special problems that might come up. Results of the industry capacity survey were discussed, but more work remains to be done on it.

Win Navy "E" Awards

FARREL-BIRMINGHAM CO., INC., Ansonia, Conn., recently was awarded the Navy "E" burgee for its three plants in recognition of excellent performance in the manufacture of war orders. Presentation of the award was made by Rear Admiral Henry A. Wiley, chairman of the Navy Board for production awards, and was accepted on behalf of the company by A. G. Kessler, vice-president and general manager.

•

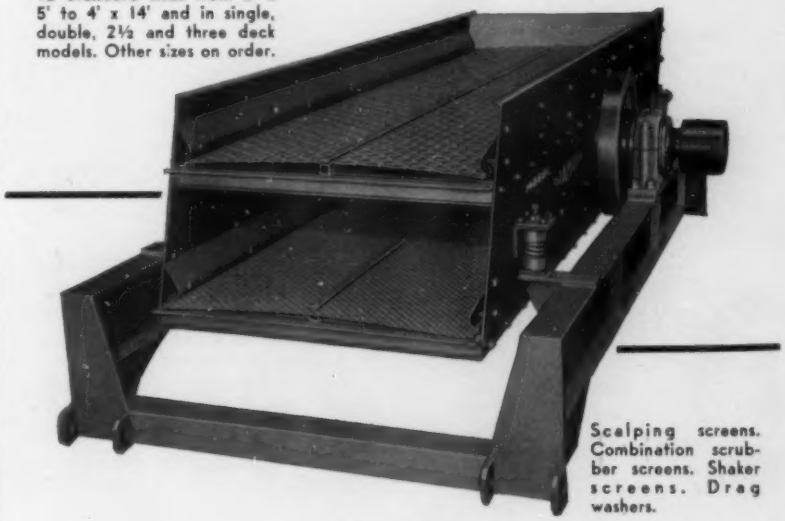
BRODERICK AND BASCOM ROPE CO., St. Louis, Mo., received the coveted Navy "E" award in a colorful ceremony in which Captain Edwin A. Wolleson, commanding officer, Navy Pier, Chicago, made the presentation of the burgee to John K. Broderick, president of the company. Prominent guests and speakers included Mayor William Becker of St. Louis; Lloyd C. Stark, former governor of Missouri; and Charles E. Bascom, secretary-treasurer.

•

THE JEFFREY MANUFACTURING CO., Columbus, Ohio was recently honored with the presentation of the Navy "E" award for excellence in the manufacture of navy ordnance equipment. President Robert W. Gillispie accepted the award for the company which was presented to O. R. Ehret, a veteran employe of 63 years' service.

Balance! That's why DIAMOND Screens Outperform

12 Standard sizes from 2' x 5' to 4' x 14' and in single, double, 2½ and three deck models. Other sizes on order.



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Valves-Couplings-Nipples-Clamps-Menders

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Priorities

(Continued from page 83)

The treatment accorded the makers of mining machinery is just as important to you gentlemen as it is to them, because if they had not been given this treatment they would not have been able to produce the machines needed by the lime industry, the other non-metallic industries, the metal mining industry, and the coal mining industry, for the following reasons:

Manufacturers' Problem

The makers of mining machinery have some of the finest precision tools in the United States and their plant capacity, to a large part, has been taken over by the Army and Navy in the making of munitions, so that in many plants not over 50 per cent of their plant capacity has been left for making mining machinery. Furthermore, they have had part of their plant capacity taken over by the machine tool industry. In both cases these makers of mining machinery are gotten A-1-a ratings for all of their raw materials. Up until March 2, they were in the position of having their work divided into three segments: on one side A-1-a ratings for munitions, on the other side A-1-a ratings for machine tools, and in between, being squeezed out, A-3 ratings for materials for making mining machinery. But we were able, by telling the story to the proper people in WPB, to get the makers of mining machinery put on a parity with the makers of munitions, because that is just what it means, and that is where they belong.

Due to the fact that we have gotten this high directive and placed the makers of mining machinery on a parity with the makers of munitions, we have been required to see to it that no machine made by any such manufacturer can be delivered to any mine until it has the approval of the Mining Branch. So when any lime manufacturer, any copper mine, any coal mine or iron mine wants a new machine, that machine cannot be delivered until the request for it has been approved and a rating given to it by the Mining Branch of the Materials Division of WPB. It is a grave responsibility and one that we assume and attempt to handle properly. We realize that when there is a limited number of machines, we must give consideration to those industries that are the most important in the direct war effort. Some weeks maybe a copper mine will be most important; some week perhaps an iron mine; and, again, some week probably a lime plant may be just as important as any other type of mining activity to our national defense. But we must look at it from an overall standpoint.

In addition to the limited capacity of the makers of mining machinery, we are limited in the critical materials which go into these machines, and so again I can only emphasize that we have a shortage of mining equipment.

In connection with the operation of the Mining Branch, I think you know that we have in each state in the Union a State Coordinator designated by the Governor of his state, a man who is familiar with mining problems. When anyone wishes to obtain a serial number for his mining operation, he must first apply through the State Coordinator, giving him the information needed so that he can then send it to us for use in deciding whether or not that operation will be given a serial number. In recent months, we have set up in the United States our own field offices. These field offices are only to assist the State Coordinator.

In the past we have had a monthly report that each one of you operating under a serial number filed with the State Coordinator. That report has been known as PD-119. At the present time, at the insistence of the Division of Research and Statistics, we have been forced to change this form in a manner that is entirely unsatisfactory to the Mining Branch. All I can say to you gentlemen is, when you receive this new form, please fill it in and mail it as usual until we can, as we hope, get you back on the old PD-119 form. We feel that the old form gives us the information we need to keep track of your operation, and is the one on which you can report more simply just what you are getting under priority ratings. For the time being, you will have to use the new form which has been sent to you, and you will still send one copy of it to the State Coordinator and another copy to one of the divisions of WPB, in accordance with the instructions which you will receive when you receive the new form.

There is only one way in which the mining industry can succeed under the present war conditions, and that is by what I like to call three-way cooperation. The three-way cooperation consists of the Mining Branch which must cooperate with you as fully as you should cooperate with us; and I might say that I think you are cooperating fully with us. The third group which must cooperate with us are the makers of mining machinery, and all in all, they are doing a fine job in this respect.

Recent Rate Changes

Following are the latest proposed changes in freight rates up to and including the week of June 20

Southwestern

27875. **Dolomite or lime,** loaded in container cars—weights, how ascertained, from, to and between points in the Southwest. To amend Rules 20 and 25 of S. W. L. Tariff 230-B to permit ascertainment of tare weight at destination of cars carrying shipments of dolomite or lime in container cars to be used in the computation of freight charges, in lieu of stencilled tare weight of car.

27882. **Feldspar,** Erwin, Tenn., Minpro, Sprucepine and Bowditch, N. C., to Eastland, Tex. To amend S. W. L. Tariff 1-Y by establishing the following rates in cents per 2000 lb. on feldspar, carloads, to Eastland, Tex.: From Erwin, Tenn., Minpro, N. C., and Sprucepine, N. C., 957c; and from Bowditch, N. C., 983c.

27933. **Limestone,** Hannibal and White Bear, Mo., Quincy and Marblehead, Ill., to Arkansas, Louisiana, Oklahoma, Texas, Missouri and Kansas. To establish the distance scale of rates shown under Basis 30 of Item 800, S. W. L. Tariff 162-R, on limestone, crushed or ground, carloads, when shipped in box or other closed cars from Hannibal and White Bear, Mo., to stations in Arkansas, Louisiana (west of Mississippi River), Oklahoma, Texas, Missouri and Kansas, to the extent of present application of rates in Item 1410-D, S. W. L. Tariff 162-R, subject to minimum weight as presently provided in paragraph (b) of Item 60 of that tariff. Rates from Marblehead and Quincy, Ill., to be on recognized differential for Mississippi River Crossings.

27988. **Phosphate of lime,** E. St. Louis, Ill., and St. Louis, Mo., to Muskogee, Okla. To cancel the rates now shown in Item 3030 of S. W. L. Tariff 3-A, applying on phosphate of lime, carload min. wt. 16,000 lb., from E. St. Louis, Ill., and St. Louis, Mo., to Muskogee, Okla.

28018. **Feldspar,** Bedford, Va., to Shreveport, La. To establish rate of 715 cents per net ton from Bedford, Va., to Shreveport, La., applicable on feldspar, carloads, min. wt. 80,000 lb. to alternate with the present rate of 935c per net ton, min. wt. 50,000 lb.

28092. **Tripoli,** Hot Springs, Ark., to Official and Eastern territories. To establish the Class 16 rating on tripoli, minimum weight 60,000 lb. from Hot Springs, Ark., to Official and Eastern Territories by amending Note 2, Section 2, Item 1572-A of S. W. L. Tariff 252-A, to include Hot Springs, Ark.

28240. **Fluorspar,** Rio Grande crossings, to Canada. To establish the following rates, subject to Ex Parte 148 increase, in cents per ton of 2000 lb. on fluorspar, C. L., min. wt. 60,000 lb., from Brownsville, Eagle Pass, El Paso, Laredo and Presidio, Tex., ex Mexico, to:

Arvida, Que.	1454
Montreal, Que.	1254
Niagara Falls, Ont.	1122
Hamilton, Ont.	1122
Welland, Ont.	1122
Port Hope, Ont.	1254
Sault Ste. Marie, Ont.	1254

28260. **Lime,** L. C., Arkansas, Missouri and Oklahoma producing points to Arkansas, Kansas, Missouri, Oklahoma and Texas. To cancel all rates published in S. W. L. Tariff 268, I. C. C. 3446, applying on lime, L. C., from Arkansas, Missouri and Oklahoma producing points

Note 1—Minimum weight marked capacity of car.

Note 2—Minimum weight 90% of marked capacity of car.

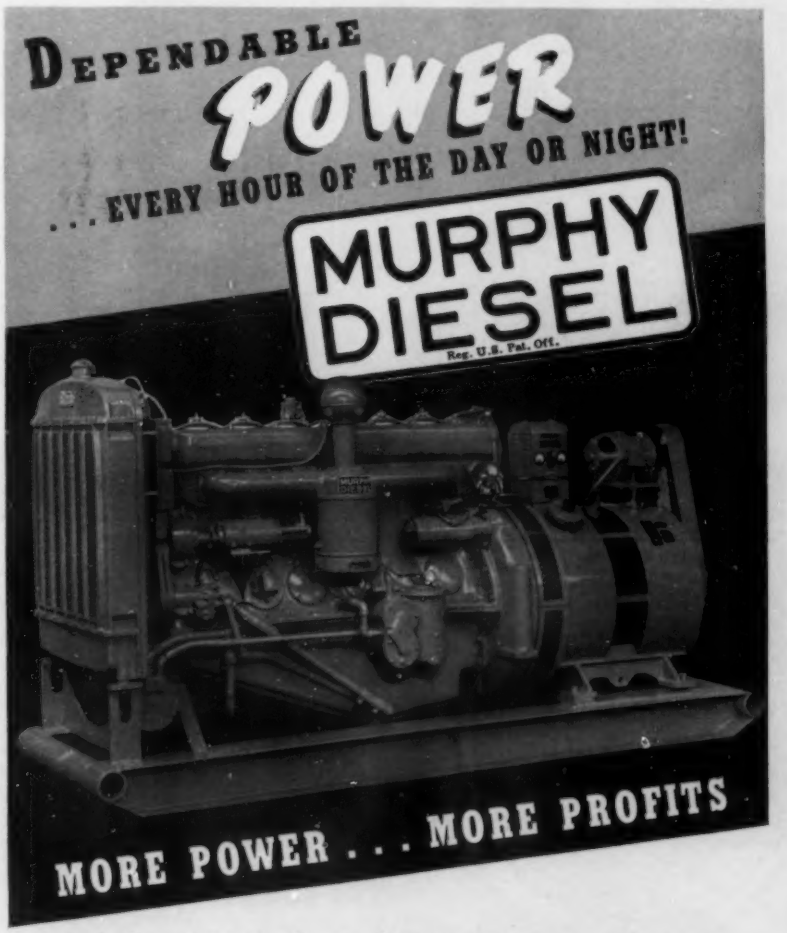
Note 3—Minimum weight 90% of marked capacity of car, except that when car is loaded to visible capacity the actual weight will apply.

Note 4—Reason. No present or prospective movement.

Note 5—Reason: Comparable with rates from other origins in immediate vicinity.

Note 6—Rates will not apply on shipments in cars with tarpaulin or other protective covering. In such instances the rates applicable on shipments in box cars are to be assessed.

Note 7—The oil, tar or asphaltum not to exceed 10% of weight of the commodity shipped, the shipper to so certify on shipping order or bill of lading.



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And, absence of blinding means greater efficiency and greater capacity.

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INCORPORATED
BUFFALO, N.Y.

to Arkansas, Kansas, Missouri, Oklahoma and Texas.

28277. **Feldspar,** from Colorado, South Dakota, Tennessee, North Carolina and Virginia, to points in Oklahoma, Arkansas, Louisiana and Texas. To revise rates on feldspar, C. L., from points in Colorado, South Dakota, Tennessee, North Carolina and Virginia to points in Oklahoma, Arkansas, Louisiana and Texas. As an example, there is shown below the rates proposed from Denver, Colo. Rates from South Dakota to be revised on basis of 88c higher than the proposed rates from Denver, Colo. It is also proposed to apply a min. wt. of 80,000 lb. in connection with the proposed rates and to cancel all other existing rates, including rates to points not shown below to which specific commodity rates are now in effect:

To	Pro.
Blackwell, Okla.	580
Sand Springs, Okla.	580
Sapulpa, Okla.	580
Tulsa, Okla.	580
Henryetta, Okla.	600
Muskogee, Okla.	600
Okmulgee, Okla.	600
Ada, Okla.	620
Poteau, Okla.	640
Ft. Smith, Ark.	640
Wichita Falls, Tex.	560
Three Rivers, Tex.	800
Dallas, Tex.	640
Ft. Worth, Tex.	640
Waco, Tex.	660
Palestine, Tex.	700
Houston, Tex.	740
Shreveport, La.	720

Western

E-41-507. **Stone, crushed or ground.** Stone, rubble, of irregular random widths, lengths and thicknesses, not trimmed or tooled, not suitable for manufacture, cutting or dressing, actual value at origin point not in excess of $4.50 net ton of 2000 lb. (See Note 3). In no case shall the min. wt. be less than 40,000 lb., from Ablemans, Devils Lake, Lohrville, Neshkora, Rattlesnake, Red Granite and Spring Lake, Wis., to Goose Lake, Ill. Rates, present, $2.34 net ton. Proposed, $1.65 per net ton.

New England

57517 (1-R). **Common sand,** min. wt. 50 tons of 2000 lb., except when cars of lower capacity are furnished for carrier's convenience the min. wt. will be the marked capacity of the car, but not less than 40 tons of 2000 lb. from Martin to Portsmouth, N. H. Present—88 (B. & M. I. C. C. A-3045). Proposed—58 (subject to Ex Parte 148 increase). Reason: To enable the B. & M. R. R. to receive a haul on this material.

57618 (1-A). **Crushed stone,** min. wt. 50 net tons, except that when cars of lower capacity are furnished for carrier's convenience, the min. wt. will be the marked capacity of the car, Greenfield to North Adams, Mass. Present, 62 (as per B. & M. M. D. P. U. 2929); proposed, 65c. Reason: To increase subnormal rate to a more reasonable basis.

57663 (1-A). To cancel B. & M. M. D. P. U. 2983 naming charge of $28 per car on **crushed stone** from Greenfield to Chicopee, Mass., permitting mileage commodity rates to apply. Reason: To cancel rate not being used.

57698 (1-A). To cancel B. & M. M. D. P. U. 2984 naming rates on **crushed stone** from Greenfield, Kendal Green, Lynn and Winchester, Mass., to Ayer, Mass., permitting mileage commodity rates to apply. Reason: To cancel rate not being used.

57770 (1-A). **Crushed or broken stone,** min. wt. 70 net tons, except that where cars of lower capacity are furnished for carriers' convenience, the min. wt. will be the mkd. cap. of car, from Winchester to Worcester, Mass. (N. Y. N. H. & H. R. R.

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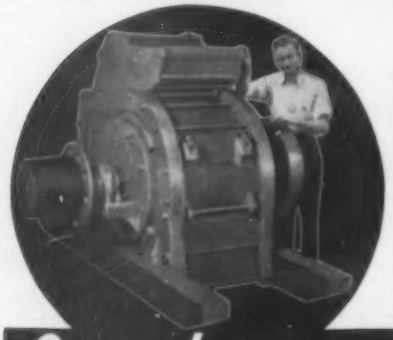

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Swing Hammer PULVERIZER

Its wide crushing range makes it serve the purpose of two or more other types of crushers. Roller bearing equipped. Write for Bulletin.

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for ROCK—
SAND—GRAVEL

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GYRATING SCREENS

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Other Simplicity features are the special rubber corner supports, screen cloth in tension four ways over a doubly crowned screen deck, and sturdy all steel construction with each machine finished in every detail.

Simplicity Gyrating Screens are available in sizes from a 2′ x 3′ up to a 5′ x 12′ in single shaft assemblies; built in one, two, three, and four decks; as standard inclined types and also as low head types, where desired.

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BELT LACING and FASTENERS for transmission and conveyor belts

"JUST A HAMMER TO APPLY IT"

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STEEL BELT LACING

World famed in general service for strength and long life. A flexible steel-hinged joint, smooth on both sides. 12 sizes. Made in steel, "Monel Metal" and non-magnetic alloys. Long lengths supplied if needed. Bulletin A-60 gives complete details.

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By using Flexco HD Rip Plates, damaged conveyor belting can be returned to satisfactory service. The extra length gives a long grip on edges of rip or patch. Flexco Tools and Rip Plate Tool are used. For complete information ask for Bulletin F-100.

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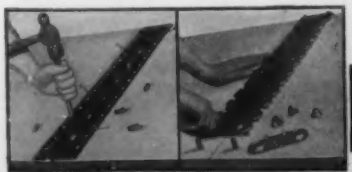

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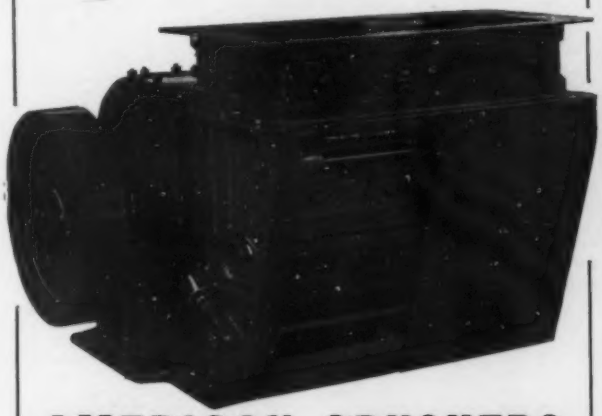

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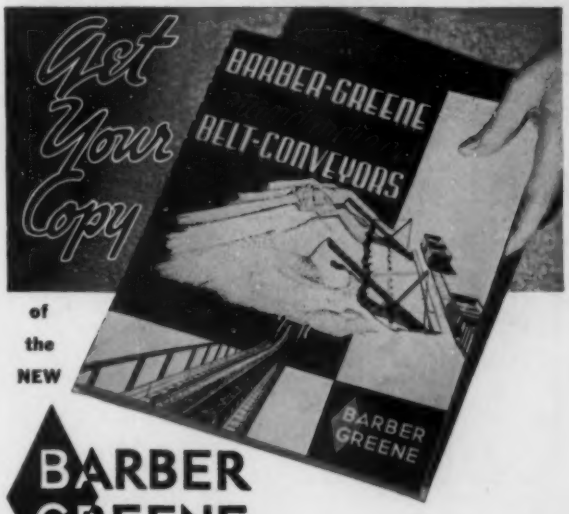

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the most practical method of preventing *burnouts* and interrupted operations.

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The outstanding feature of this modern rock drill is its welded and riveted sturdy frame. Pounding down six inch holes in hard rock, gives a rock drill a lot of jolts—and that is why KEYSTONE engineers employed a combination of both welding and riveting to give it a rugged and durable frame foundation.

The working mechanism of the Model 51 crawler traction drill is likewise made to take rough service. Shafts and anti-friction bearings are oversized. The length and character of the stroke are adjustable to give greatest efficiency.

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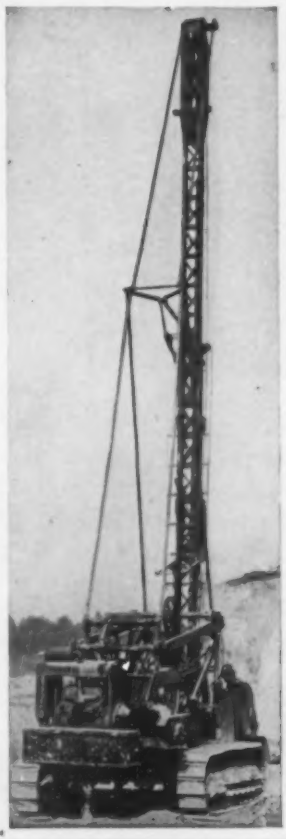


delivery). Present, 67 (B. & M. M. D. P. U. 2883); proposed, 70 (subject to Ex Parte 148 increase). Reason: to increase subnormal rate to a more reasonable basis.

57774 (1-A). **Ground limestone,** min. wt. 30 net tons, Waltham to Boston, Edgeworth and Malden, Mass. Present, 82 (B. & M. M. D. P. U. 2979); proposed, 90. Reason: To increase subnormal rate to a more reasonable basis.

57783 (1-A). **Feldspar,** crude or crushed (not ground), Cold River to Keene, N. H. Present, $30 per car as per B. & M. N. H. P. S. C. 1473; proposed, $33 per car. Reason: To increase subnormal rate to a more reasonable basis.

57824 (1-A). To cancel Item 50 of St. J. & L. C. R. R. I. C. C. 65, naming rate of 23c on **stone chips and stone, crushed; dust, ground or powdered or waste,** Swanton, Vt., to New York City stations, permitting class rates to apply. Reason—Obsolete.

57939 (1-A). To cancel rates on **limestone,** ground or pulverized (not whiting), from Yarmouth, Me. (G. T.), to stations on the G. T. Ry. and B. & M. R. R., and from Yarmouth Jct., Me. (Me. C.) to Me. C and B. & M. R. R. stations as named in G. T. Ry. I. C. C. 267 and 228, and Me. C. I. C. C. C-4545 and C-4552, permitting class rates to apply. Reason—Obsolete.

57946 (1-A). To cancel obsolete rate of 40c net ton on **common sand and gravel** from Scotia to Saratoga Springs and Schuylerville, N. Y., as per B. & M. P. S. C.-N. Y. 1156, permitting mileage commodity rates to apply.

58016 (1-A). **Crushed stone,** Greenfield, Mass., to Readsboro, Vt. Present—$1.10 per ton of 2000 lb. (B. & M. Tariff A-3041). Proposed—$1.20 per ton of 2000 lb. (not subject to Ex Parte 148 increase). Reason—To increase subnormal rate to a more reasonable basis

58047 (1-R). **Common sand,** minimum 60 tons of 2000 lb., Bedford, Mass., to Lynn, Mass. Proposed—50c per ton of 2000 lb. Present—77c per ton of 2000 lb. (B. & M. R. R. I. C. C. A-3045). Present and proposed rates subject to Ex Parte 148. Reason—To enable the Boston and Maine R. R. to obtain a haul on this material.

Central

Sup. 1 to W. D. A. 70217. **Fluorspar,** in pkgs. or in bulk, C. L., min. wt. 40,000 lb. W. D. A. 70217, D. B. 3122, dated March 20, 1942, covering proposal to establish rates on, from Brookport, Golconda, Homberg, Metropolis, Ill., Evansville, Ind., Cochrans Spur, Eichorn, Rosiclare and Stewart, Ill., is hereby corrected by changing proposed rates from Brookport, Golconda, Homberg, Metropolis, Ill., and Evansville, Ind., of 578c and from Cochrans Spur, Eichorn and Rosiclare and Stewart, Ill., of 611c per net ton to read 545c and 578c per net ton, respectively.

70442. **Sand, all kinds, and gravel,** in open top cars, C. L. Establish on, from Rittenours, O., to Philo (Duncan Falls), O., 116c per net ton.

70478. **Sand (industrial),** in all kinds of equipment, C. L.; **sand** (industrial), in closed equipment, or in open-top equipment with tarpaulin or other protective covering, C. L.; **Sand** (industrial) in open top equipment, not covered with tarpaulin or other protective covering, C. L. Establish on, from Rockwood, Mich., to T. L. A. points, rates as shown below.

(Rates in cents per ton of 2000 lb.)

From Rockwood, Mich., to—	Col. A	Col. B
Brockway, Penn.	275	275
Clarion, Penn.	253	253
Corning, N. Y.	286	286
Dunbar, Penn.	264	264
Elmira, N. Y.	297	297
Knox, Penn.	275	275
Marienville, Penn.	286	286
Olean, N. Y.	253	253

Port Marion, Penn.....	297	297
Port Allegheny, Penn.....	275	275
Port Jervis, N. Y.....	363	363
Rochester, N. Y.....	253	253
Schenectady, N. Y.....	341	341
Scottdale, Penn.	264	264
Sergeant, Penn.	264	264
Sheffield, Penn.	253	253
Syracuse, N. Y.....	297	297
Utica, N. Y.....	308	308
Washington, D. C.....	363	363
Wellsboro, Penn.	297	297

Note—Proposed rates shown in this exhibit will be subject to Agent B. T. Jones' Tariff of Increased Rates and Charges No. X-148, I. C. C. No. 3659.

70487. **Slag, expanded,** C. L. Establish on, from Chicago, Ill., to Buffalo, N. Y., 304c per net ton.

70538. **Limestone, ground or pulverized, unburnt,** C. L., min. wt. 60,000 lb. Establish on, to Mt. Clemens, Mich., from Greencastle, Ind., 259c; Bloomington, Ind., 270c per net ton, subject to Ex Parte 148 increase.

70563. **Sand** (except industrial) or **gravel,** in open top equipment, without tarpaulin or other protective covering, C. L. (See Note 3), provided that orders will not be accepted for open top cars of less marked capacity than 80,000 lb., and provided further that when a shipper orders a car of this marked capacity or greater, and the carrier is unable to furnish car ordered and furnishes a car of greater capacity than ordered, the minimum weight for the car furnished will be that which would have been obtained had the car ordered been furnished and used. (Any provisions of the aforesaid minimum weight which conflict with I. C. C. Service Order 68 are suspended during the period such service order is in effect.) Establish on, from Pittsburgh Stations, Penn., to Ralph Myer Construction Siding (waybills to be headed Queen Jct., Penn.) Penn., W. A. R. R., 110c per net ton, subject to Ex Parte 148 increase.

70564. **Sand, all kinds, and gravel,** in open top cars, C. L. Establish on, from Madison, O., to Ashtabula, O., 44c per net ton, via N. Y. C. (W.) direct, subject to Ex Parte 148 increase of 3 percent.

70666. **Crushed stone,** C. L., from Monon, Ind., to Dana, Ind., 111c per net ton, via C. I. & L.-Roachdale-B. & O., subject to Ex Parte 148 increase.

70672. **Sand, industrial,** C. L.; **Sand** (except industrial), in closed equipment, C. L.; **sand** (except naturally bonded moulding, ground or pulverized sand), in open top equipment, C. L. (See Note 1). Establish on, from the so-called Vassar Group, viz.: Vassar, Wampson, McHale, Juniata and Watrousville, Mich., also from Dayton (Black Siding), Mich., to Orillia, Ont., 446c in open cars and 473c per net ton in closed cars, subject to Ex Parte 148 increase.

Note 1—Rates will not apply on shipments in cars with tarpaulin or other protective covering. In such instances the rates applicable on shipments in box cars are to be assessed.

PULVERIZERS for the reduction of Cement Materials, Limestone, **Agricultural Limestone,** Fire Clay and All Dry, Refractory Materials.

Capacities: 1 to 60 tons per hour — Finenesses: 20 to 350 mesh

BRADLEY PULVERIZER CO.

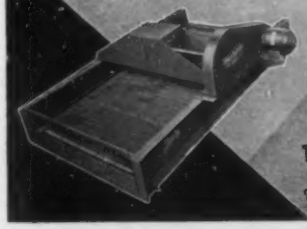
ALLENTOWN, PENNA.

To Increase Capacities or Fineness of Present Grinding Plant—
To Reduce Power and Maintenance Costs—
To Insure an Absolutely Uniform Product—

***Use the* BRADLEY AIR SEPARATOR**

THE Leahy HEAVY DUTY

No-Blind VIBRATING SCREEN with TRI-VIBE —for Fine Mesh Screening



Greater Capacity at less cost

THE Leahy HEAVY DUTY Vibrating Screen

Leahy Screens are designed to do maximum work at minimum cost - operate at full capacity at only ½ HP — annual maintenance cost guaranteed at less than 1% of original purchase price.

Write for bulletin No. 14 H

THE DEISTER CONCENTRATOR COMPANY
The Original Deister Co., Est. 1906
915 GLASGOW AVE. FORT WAYNE, IND.

THE ROSS FEEDER

Completely controls the flow of any size material from Storage Bins, Hoppers or Open-Dump Chutes to Crushers, Conveyors, Screens, etc.
High in efficiency. Low in maintenance and power consumption.

Furnished in sizes to suit your operation. Send full particulars for recommendation.

ROSS SCREEN & FEEDER CO.

19 Rector Street, NEW YORK, U. S. A. — 2 Victoria Street, LONDON, S. W. 1., ENGLAND

UNIVERSALS HAVE JOINED THE RANKS, TOO

—Serving at many important points in our OFFENSE EFFORT.

More than ever before, the RELIABILITY, EFFICIENCY and ECONOMY of UNIVERSAL SCREENS is APPRECIATED,—now that all out production is the rule of the day.

Prices are surprisingly low and prompt deliveries can still be made. Let us send you literature and full particulars.

Drop us a line today!

UNIVERSAL VIBRATING SCREEN CO.
RACINE - - WISCONSIN

LOWEST COST PER YARD

writes the specification of a HAISS LOADER for the man who plans for the future as well as the present.

•

2-3-5 and 8 YARD CAPACITIES. Write for catalogs

HAISS QUALITY EQUIPMENT FOR 50 YEARS 1892 1942

GEO. HAISS MFG. CO., INC.

HAISS

Park Avenue & 143rd Street, New York, N. Y.

Make Your Screening Surfaces More Effective with

HARRINGTON & KING PERFORATED METAL SCREENS

Their perforations are properly spaced to give greatest capacity without loss of strength and durability. Any size, any shape, any metal, any perforation.

Write for illustrated catalog.

The Harrington & King Perforating Co

5650 Fillmore St., Chicago—114 Liberty St., N. Y.

OBITUARIES

E. L. SHANEBERGER, owner and operator of the Montezuma Gravel Co., Terre Haute, Ind., died recently at the age of 70. Mr. Shaneberger had been engaged in the gravel business for the past 30 years and formerly owned and operated the Macksville Gravel Co. Prior to that time he was a civil engineer for the Pennsylvania Railroad. He was a graduate of Rose Polytechnic Institute class of 1895.

•

HOWARD MCCUTCHEON, president, C. A. Brockett Cement Co., Kansas City, Mo., died recently at the age of 76. After being graduated from high school, he became an office boy in the cement company established by his stepfather, C. A. Brockett. Upon Mr. Brockett's death in 1907, Mr. McCutcheon became president of the firm, which in recent months has been busy with national defense orders. Mr. McCutcheon was also a director of the Lucky Tiger Mining Co.

•

EUGENE R. NORTON, Granville, N. Y., who had conducted a slate quarry since 1878, died recently at the age of 85.

•

ROBERT HUGH DOWNES, secretary, Cook and Brown Lime Co., ready mix concrete and sand and gravel producers, Oshkosh, Wis., passed away recently at the age of 63.

•

EARL POLAND, owner of the Red Star Sand and Gravel Co., Sargent, Nebr., was drowned recently in the company's gravel pit near Elyria when his boat capsized in 25-ft. of water.

•

FREDERICK HERMAN MARGGRAFF, who ran the sandpit of the Quality Sand and Gravel Co., Milwaukee, Wis., died recently at the age of 58. Many years ago Mr. Marggraff helped organize the Pipkorn-Marggraff Co., building material firm, of which he was vice-president. For over 10 years he ran its subsidiary, the Lincoln Washed Sand and Gravel Co. Both companies went out of existence during the depression.

•

WILLIAM M. RICHARDSON, founder and president of the National Portland Cement Co., Philadelphia, Penn., passed away recently at the age of 63. Mr. Richardson also was part owner of the Washington Senators of the American Baseball League, and vice-president of the club.

"Established in 1885"

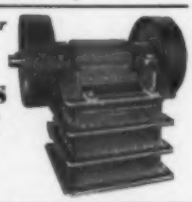
SERVING AMERICA WITH LARGE PRODUCTION

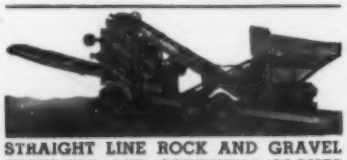
Write for New Catalog "601"

Bronze or Roller Bearing

JAW CRUSHERS

Heavy armor plate steel or cast steel Constructed
Large capacity
Small power Requirements

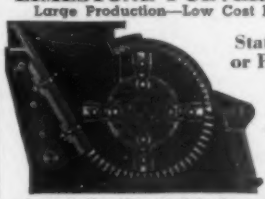




STRAIGHT LINE ROCK AND GRAVEL CRUSHING AND SCREENING PLANTS

LIMESTONE PULVERIZERS

Large Production—Low Cost Per Ton



Cross Section View of Pulverizer

Stationary or Portable

Adjustable

Crushes Large Stone to 2" minus Down to Agricultural Dust

Built in (8 sizes)

GRUENDLER

CRUSHERS · PULVERIZERS · GRINDERS

GRUENDLER CRUSHER & PULVERIZER CO.
2920-26 N. Market St., St. Louis, Mo.

SAUERMAN

POWER SCRAPER

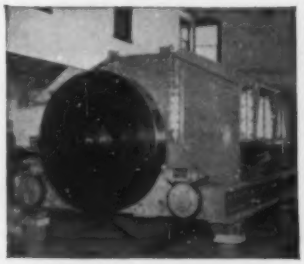
Because of its streamline design, a Sauerman Crescent scraper penetrates hard materials with the ease of a plowshare, and both in digging and hauling it requires much less line pull than any other scraper of equal capacity. It digs a heaping load in a few seconds, moves this load rapidly over the ground, dumps cleanly when it reaches the dumping point, and then returns at high speed to dig another load.

Write today for catalog and see for yourself how others are making big profits by using Sauerman scrapers for excavating, stockpiling and general material-handling work.

SAUERMAN BROS., INC.
530 S. Clinton St. Chicago

ANOTHER "PENNSYLVANIA" *REVERSIBLE* HAMMERMILL

ready to "go on the line" in a new Cement plant designed for top efficiency in every Department.



- Major crushing by smashing impact
- Automatic hammer turning
- Product sizing control, and wear compensation, assured by Duplex cage adjustments
- Reduced power demand
- Sharply cut maintenance cost

are some of the outstanding advantages which this REVERSIBLE Hammermill will provide in the Secondary Preparation for modern Raw Side Grinding Mills.

Send for Bulletin No. 1030, and PUT YOUR REDUCTION PROBLEMS UP TO US.

PENNSYLVANIA CRUSHER COMPANY

Liberty Trust Bldg.
PHILADELPHIA, PA.

RYERSON CERTIFIED STEELS

10 Strategically-Located Steel-Service Plants

Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes, Mechanical Tubing, Rivets, Bolts, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

ARMSTRONG-BRAY
STEELGRIP
FLEXIBLE BELT LACING

ARMSTRONG-BRAY
STEELGRIP
FLEXIBLE BELT LACING

8 sizes boxed or in long lengths for wide conveyor belts. Best for rubber and fabric belts because it compresses belt ends and prevents fraying. Applied in a few minutes with a hammer. 2-piece hinged rocker pins.

Also, WIREGRIP Belt Hooks that fit any lacing machine. IMMEDIATE DELIVERY on both types.

Write for Circulars.

Armstrong-Bray & Co.

"The Belt Lacing People"
5386 Northwest Highway
CHICAGO, U. S. A.

WILFLEY
centrifugal SAND PUMPS

for Slurries, Sand Tailings Slimes, Acid Sludges

Save Pumping Cost

Continuous operation without attention for long periods. Stuffing box, stuffing, gland water ALL eliminated. Close clearances maintained by easy slippage seal adjustment. Heavy pumping parts of material best suited for YOUR particular problem. Complete engineering service. Prompt shipment of parts. The most efficient and economical pump you can buy. *Write for Complete Catalog*

A. R. WILFLEY & SONS, Inc. Denver, Colo., U. S. A.

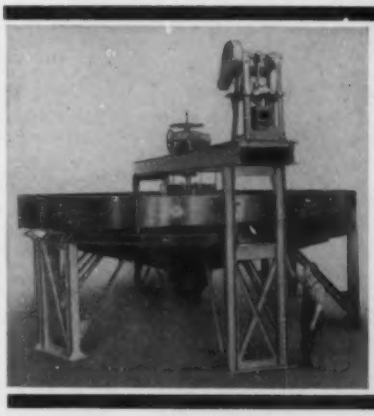
NEW YORK OFFICE: 1775 BROADWAY

B&W PULVERIZERS

FOR
DIRECT FIRING KILNS
AND FURNACES

FOR RAW MATERIAL, CLINKER
AND MISCELLANEOUS MATERIALS

THE BABCOCK & WILCOX COMPANY
85 LIBERTY STREET NEW YORK, N. Y.



DENVER HYDRO-CLASSIFIER

The Denver Hydroclassifier is designed for fine sizing and de-sliming problems where it is essential to reduce materials to sizes minus 200 mesh to 10 microns. Enclosed integral lift vertical worm gear drive makes it easy to raise rakes. The spiral rakes convey material to center cone in shortest time. Ask us how these machines will save you money. Write for bulletin No. C4A-B.

Denver Equipment Co.
1400 Seventeenth St.
Denver, Colorado
New York, N. Y., 50 Church St.
Salt Lake, Utah, McIntyre Bldg.
Chicago, Ill., 1085, 69 W. Wash.
Toronto, Ont., 45 Richmond St.
Mexico, D. F., Edificio Jalisco

When ONE TRUCK

—does the work of TWELVE, that is cost cutting that counts.

✦

Read our Full Page Ad. June Issue of ROCK PRODUCTS or write for full details.

BUY DEMPSTER

DEMPSTER BROTHERS, INC., KNOXVILLE, TENN.

SUPER-LOY
WOVEN WIRE SCREENS

LUDLOW-SAYLOR
WIRE CO. ST. LOUIS

Manufacturers' News

Robins Conveying Belt Co., Passaic, N. J., advises that Maurice B. Bradley, in charge of the Cleveland office since 1924, is now in active service as a Major in the Coast Artillery Corps of the United States Army.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., announces that Horace M. Kinne, head of the advertising media department, has been placed in charge of all the company's purchasing of office supplies, paper, and stationery. John Priebe in the industrial relations department has succeeded Mr. Kinne in the media department.

Chain Belt Co., Milwaukee, Wis., has appointed the Industrial Equipment Co., 1301—59th St., Oakland (Emeryville), Calif., as distributor of REX construction machinery in the Bay area.

Link-Belt Co., Chicago, Ill., has appointed Richard F. Bergmann as chief engineer, with headquarters in Chicago. William W. Sayers, who has served in this capacity since 1925, has been named consulting engineer. Mr. Bergmann had been assistant to Mr. Sayers from 1933 to 1936, when he resigned to become chief engineer of Rayon Machinery Corp., from which position he now returns to Link-Belt. He is a native of Logansport, Ind., was graduated from Rose Polytechnic Institute at Terre Haute, Ind., in 1918, and joined the Howe Chain Co., Muskegon, Mich. Following the merger of Howe Chain Co. with Link-Belt Co., he was transferred to Chicago, first becoming chief engineer of the Caldwell plant, and then assistant to the chief engineer. Mr. Sayers is a graduate of the University of Illinois, 1897, and a member of the A.S.M.E. He has been associated with Link-Belt Co. for the last 39 years.

Richard Bergmann

Hercules Powder Co., Wilmington, Del., has appointed William J. Austin, formerly manager of the Chicago, Ill., office of the Explosives Department, as director of purchases of the company. He succeeds Kurt W. Jappe, who will become manager of detonator operations, Explosives Department, and is succeeded by Frank W. Roman.

General Electric Co., Schenectady, N. Y., announces that C. F. Pittman, manager of the motor division, has been named assistant to the manager of the industrial department. W. H. Henry, who was manager of sales in the motor division, succeeds Mr. Pittman as manager of the division.

WE OFFER FOR IMMEDIATE DELIVERY
SUBJECT TO PRIOR SALE

KILNS, COOLERS, DRYERS, CRUSHERS, TUBE MILLS, CRANES, PUMPS, MOTORS, MACHINE TOOLS

4 Unused 5′ x 50′ Worthington (Allis-Chalmers) Coolers or Dryers complete with driving mechanism.

ALSO: The following unused equipment for two 8′ KILNS: Ring Gears, Gear Trains, and Bases, Tires and Firing Hoods, but no supporting rollers and Bases. We also have available used supporting rollers and bases that we can rebuild. We can make two 8′ diameter KILNS from above.

1—15 ton Lambert Whirley Crane, 80′ boom, full revolving.

1—15 ton Industrial Brownhoist Crawler Crane, 70′ boom.

1—G2 Bucyrus-Erie 1¼ yd. shovel, Gasoline Pneumatic Drive, Serial No. 10730.

2—Morris 6″ x 5″ Slurry Pumps with motors.

1—25 ton Browning Standard Gauge 8-wheel Locomotive Crane.

1—Steel Coal Tipple (Modern) with Shaker Screens.

WEBBER EQUIPMENT CO.
17 East 45th Street
NEW YORK, N. Y.

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You have to look to ROCK PRODUCTS for Leadership in the Industry

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Classified Advertisements

POSITIONS WANTED — POSITIONS VACANT Set in six-point type. Minimum $1.00 each insertion, payable in advance.

INFORMATION—Box numbers in care of our office. An advertising inch is measured vertically in one column. Three columns, 30 inches to the page.

CLASSIFIED—Displayed or undisplayed. Rate per column inch, $5.00. Unless on contract basis, advertisements must be paid for in advance of insertion.

ROTARY DRYERS

WE HAVE A NUMBER OF ROTARY DRYERS ON HAND AND CAN MAKE NEW DRYERS PROMPTLY.

McDERMOTT BROS. COMPANY
Allentown, Pennsylvania

RAILS AND ACCESSORIES

RELAYING RAILS—Super-quality machine-reconditioned—not ordinary Relayers.

NEW RAILS, Angle and Splice Bars, Bolts, Nuts, Frogs, Switches, Tie Plates, all other Accessories. Although our tonnages are not as large as heretofore, most sizes usually available. Every effort made to take care of emergency requirements.

PHONE, WRITE OR WIRE
L. B. FOSTER COMPANY, Inc.
PITTSBURGH NEW YORK CHICAGO

FOR SALE

Stedman Type "B"—30″ x 16″ Rolling Ring Crusher. Equipped with manganese rings; S.K.F. roller bearings and alloy-steel screen bars. An excellent crusher for producing agricultural limestone or road stone. Located in Cincinnati, Ohio. Will sacrifice. Box No. A-51, Care of Rock Products, 309 W. Jackson Blvd., Chicago, Ill.

STONE CRUSHING AND CONCRETE EQUIPMENT

CONVEYORS

3—24" wide Belt Conveyors, good heavy rubber covered belt, 153' centers. Also 105' c/c and 170' c/c.

1—30" Belt Conveyor 132' c/c on 15' wood sections.

6—16" Steel Frame Belt Conveyors in 15' sections. 6" longitudinal channels, "Link-Belt" troughing and return idlers with anti-friction bearings, 85' long c/c with motor and reduction, gear drive—also 50', 100', 125', 150' and 185' c/c lengths.

CRUSHERS

1—22"x50" All Steel JAW CRUSHER, capacity 100 tons per hour, with or without complementary equipment to make up COMPLETE CRUSHING PLANT.

1—10x20 (1020) "Good Roads" single shaft Roll Jaw Crusher for fine crushing, capacity 10 tons per hour, ¾" setting.

BATCHING PLANT

1—3 compartment Blaw Knox Bin, 75 ton capacity, with 1 yd. 3-beam Butler weigher, mounted on mixing floor 15' above ground level, supported by 10" steel "H" beams, supplied from 24" Belt Conveyor.

1—100' x 50' Portable Steel Building for concrete block machines, or for other weighed batch purposes.

Also other sizes of Jaw, Gyratory and Roll Crushers; Crushing Rolls, Cranes and Shovels, Air Compressors, Hardinge Conical Pebble and Ball Mills, Raymond Pulverizers, Coal Pulverizers, Swing Hammer Mills, Vibrating Screens, Air Classifiers, etc.

CONSOLIDATED PRODUCTS CO., INC.
15-16-17 PARK ROW *Shops and Yard at Newark, N. J., cover eight acres.* **NEW YORK, N. Y.**

New—RAILS—Relaying
ALL SECTIONS

Also contractors' equipment, "V" shaped and Western cars, 24 and 36-in. gauge, portable track, gas locos, frogs and switches. Attractive prices quoted. Wire, write or telephone for quotations.

M. K. FRANK
480 Lexington Ave. New York, N. Y. | 25 St. Nicholas Building Pittsburgh, Pennsylvania

---

No. 19 & 37 Kennedy Gyratory Crushers
24x36" Farrell, 42x48" Traylor & 84x56" Superior Jaw Crushers
18x20" McLanahan Double roll
2, 3 & 4' Symons Cone, one 2' fine bowl
Barber Greene & Haiss Bucket Loaders
70 ton Lima Shay std. ga. Locomotive. Rebuilt
21—1½ yd. Atlas 36" ga. Dump Cars
No. 0 Raymond Pulverizer complete
4—4 yd. Koppel 36" ga. heavy duty Quarry Cars
50-B Bucyrus Steam comb. Shovel & Dragline
50 HP Caterpillar & 71 HP Hercules Diesels

MID-CONTINENT EQUIPMENT CO.
Pa. 2290 710 Eastgate St. Louis, Mo.

ELECTRICAL MACHINERY

Motors and Generators, A.C. and D.C., for sale at attractive prices. New and Rebuilt. All fully guaranteed. Write for List and Prices.

V. M. NUSSBAUM & CO.
Fort Wayne, Indiana

FOR SALE

Rebuilt Symons Impact Crusher, Size 30", Shop No. IM 30-5.

OHIO VALLEY SAND CO.
New Martinsville, W. Va.

FOR SALE

1 Besser 12 ft. Batch Mixer
1 Besser 25 ft. Batch Mixer
Both complete with 220-V, 3-Phase Motors

ROCKVILLE FUEL & FEED CO.
Rockville, Maryland

IMMEDIATE SHIPMENT LOW PRICES — **NEW RUBBER** — **GUARANTEED HIGH GRADE**

CONVEYOR and TRANSMISSION BELTING

CONVEYOR BELTING
ABRASIVE RESISTANT COVERS

Width	Ply	Top	Covers
48"—	8—	1/8"	—1/16"
42"—	5—	1/8"	—1/16"
36"—	6—	1/8"	—1/16"
30"—	6—	1/8"	—1/16"
30"—	5—	1/8"	—1/16"
24"—	5—	1/8"	—1/32"
24"—	4—	1/8"	—1/32"
20"—	5—	1/8"	—1/32"
20"—	4—	1/8"	—1/32"
18"—	4—	1/8"	—1/32"
16"—	4—	1/8"	—1/32"
14"—	4—	1/16"	—1/32"
12"—	4—	1/16"	—1/32"

TRANSMISSION BELTING
HEAVY-DUTY— FRICTION SURFACE

Width	Ply	Width	Ply	Width	Ply
18"—	6	10"—	6	6"—	5
16"—	6	10"—	5	5"—	5
14"—	6	8"—	6	4"—	5
12"—	6	8"—	5	4"—	4
12"—	5	6"—	6	3"—	4

ELEVATOR BELTING
HEAVY DUTY RUBBER COVERED

Width	Ply	Top	Covers
12"—	6—	1/16"	—1/16"
14"—	6—	1/16"	—1/16"
16"—	6—	1/16"	—1/16"
18"—	6—	1/16"	—1/16"

ENDLESS "V" BELTS
"A"—WIDTH—All Sizes
"B"—WIDTH— " "
"C"—WIDTH— " "
"D"—WIDTH— " "
"E"—WIDTH— " "
Sold in Matched Sets

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ALL SIZES FOR AIR — WATER — STEAM — SUCTION — FIRE — WELDING ETC.

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15-40-50-75-120-300 HP.
Diesel Oil Engines
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2—4 Ton WESTINGHOUSE, 250 V., 36" Ga., Equipped with 902-C Motors, and complete with Motor Driven Cable Reels.

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16, 24-yd. Koppel	24, 16-yd. Western
4, 20-yd. Koppel	12, 16-yd. Kilbourne & Jacobs
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OTHER TYPES OF CARS TOO
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4

PUBLIC AUCTION SALE

MACHINERY AND EQUIPMENT
OF SLATE GRANULE PLANT OF THE SLATE PRODUCTS COMPANY
GRANVILLE, N. Y.

THURSDAY, JULY 16, 1942 — **AT 2 P.M. (E.W.T.)**

On the premises

CRUSHERS

1—20" Allis-Chalmers Superior McCully Gyratory, capacity 125 t.p.h. at 3" setting; 275 t.p.h. at 5½". Feed opening 20" wide. With or without 125 H.P. 3/60/440 v. motor.

1—No. 4 Kennedy Gyratory, 8" feed opening.

CRUSHING ROLLS

3—Sets 30"x16", made by Sturtevant Mill Co. Also 36x16" Sturtevant.

2—40"x16", made by Colorado Iron Works.

BUCKET ELEVATORS

(All made by Sturtevant Mill Co.)

2—36' c/c, 12"x7" buckets, No. 5 chain, STEEL HOUSING

6—36' c/c, 10"x6" buckets, No. 4 belt, STEEL HOUSING

1—55' c/c, 14"x9" buckets, No. 4 belt, WOOD HOUSING

1—50' c/c, 10"x6" buckets, No. 4 belt, WOOD HOUSING

ELECTRIC MOTORS

16—125 H.P., 80, 75, 50, 30 and smaller, all 3/60/440 volts.

SCREENING EQUIPMENT

6—Sturtevant Vibrating Screens, arranged in pairs, 7'6"x6', double deck.

1—Tyler 6'x6', double.

1—3'x9' Good Roads Trommel.

5—2'8"x12' Trommel Screens.

MISCELLANEOUS

2—Sturtevant Mill Co. Swing Hammer Mills.

1—10 ton Whiting Hand Traveling Crane, over 20" crusher.

1—Jeffrey Pan Conveyor 24"x70' c/c, steel frame, roller bearing traveling chain.

1—60" Shaving Wheel Exhauster.

1—220 gal. Oil Tank.

1—36" Exhaust Fan.

1—100 gal. Open Steel Tank.

1—200 lb. Automatic Richardson Dump Scale.

1—Spencer Turbo Compressor.

1—⅜" Viking Rotary Oil Pump, ¼ H.P. motor, Turbo Blower, Ventura Burner.

1—4" Centrifugal Pump.

1200 Ft. 1¾" Cable.

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Hemp Center Cable—75% new or better.
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24 Ton Link Belt Electric Loco. Crane.
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10,000 Gal., 15,000 Gal. & 20,000 Gal. Cap.

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118 Ton Blaw Knox 2 Compt.

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400 Barrel Butler Portable Steel Cement Bin with Fuller automatic batcher, push button control.

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8, 10 and 14 ft. Separators, Gayco & Bradley.

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36x60 Fairmount & 36x20 Diamond.

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10x8, 12x7½, 14x7, 15x9, 15x10, 16x9, 16x12, 16x10, 18x11, 20x8, 20x6, 20x10, 20x12, 26x12, 30x15, 30x13, 36x15, 36x30, 36x18, 36x14, 36x9, 36x6, 36x10, 36x24, 42x9, 46x42, 48x36, 60x42, 94x66, 36x16, 9x36.

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42 in. McCully Mammoth Gyratory.
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8ft In.x20 Ft.,8 Ft.x30 Ft., 4 Ft.x80 Ft., 54 In. x 30 Ft., 42 In.x24 Ft., 5 Ft.x30 Ft., 5 Ft.x16 Ft.,5 Ft.x60 Ft.,6 Ft.x60 Ft.,6 Ft. x 20 Ft., 6 Ft.x70 Ft.,10x20,7½x100 & 8x110 Ft. Kilns.

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STIFF LEG: 5 Ton 70 Ft. Boom, 15 Ton 100 Ft. Boom,25 Ton 100 Ft.Boom,75 Ton 135 Ft.Boom.

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GASOLINE: 2 Ton,5 Ton,8 Ton,12,14,and 20 Ton.
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1—42" x 547 ft.
1—30" x 550 ft.
1—24" x 400 ft., roller bearing type with belts and motors.

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1—100 H.P. Scotch Marine return tubular boiler.

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1—Bucket Elevator with steel buckets 14 x 14 x 7" on heavy duty single chain, complete with all chains, sprockets, etc., 40' centers mounted on wood frame.

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1—15 ton capacity, length 1800 ft. between towers, 150' high with hoist, carrier, cables, etc.

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12—4 yd. cap. all steel Rocker Dump Cars, standard gauge.

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All standard makes Size No. 4 openings, 8 x 30 to Size 21, openings 42 x 134".

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8 x 16 up to and including 60 x 84.

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1—Traylor 42" x 48" capacity per hr. 260 tons at 8" or 118 tons to 5", manganese fitted, perfect condition, immediate delivery. Located Bangor, Maine.
1—Allis Chalmers 24 x 36, used only three months.
1—Symons 2' and 1—4' Cone Crushers, coarse bowl.
1—McLanahan 21 x 42" all steel single roll crusher.
1—Buchanan and 1—Farrel 13 x 30.
3—Traylor 12" x 16" gyratory.
2—Allis Chalmers 6" and 10" Superior.
1—Telsmith 16A Crusher.
1—Acme 14 x 26 Crusher.
1—New Holland 7 x 12".

COMPRESSOR
1—Ingersoll Rand 315 cu. ft. of actual air per minute, size 7½ x 6½ two stage, powered with diesel motor type H oil engine, model WBFH, size 6½ x 8, with or without Mack truck with pneumatic tires.

CRAWLER CRANE
1—Industrial Brownhoist 15 ton capacity 50' boom, 100 H.P. Buda motor, double drums for clamshell work.

GANTRY TYPE BUCKET CRANES
2—5 ton cap., electric Gantry type Cranes, one 46' and one 61 ft., 4 motor type AC, cage control, photo and drawings available.

LOCOMOTIVE CRANE
1—O & S 22 ton steam, std. gauge, 8 wheel, double drums for clamshell work, 55' boom, ASME boiler, 125 lbs. working pressure.

DERRICK
1—15 ton all steel Stiff Leg Derrick, 75' boom.

DRYERS
1—7' x 55' single shell.
1—8'6" x 85' double shell.

LOCOMOTIVES, STEAM AND GAS
1—Baldwin 80 ton, six wheel switcher with tender.
1—American 42 ton, 4 wheel, std. gauge, saddle tank, cylinders 14 x 22, 190 lbs. working pressure, ASME boiler.
2—Vulcan 22 ton, 4 wheel, std. gauge, saddle tank, air brakes.
1—Vulcan 21 ton, steam, air brakes, std. gauge.

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2—45 ton Heisler geared locomotives, 36" gauge.
8—Plymouth and Whitcomb, 4, 7, 8, 14, 16, 20 ton; 24" and 36" gauge.

FIRE PUMP—UNDERWRITERS
1—1000 GPM @ 100 lbs. pressure with 125 H.P., 220 volt, A.C. Motor and control.

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¾ yd. Haiss rehandling clamshell.
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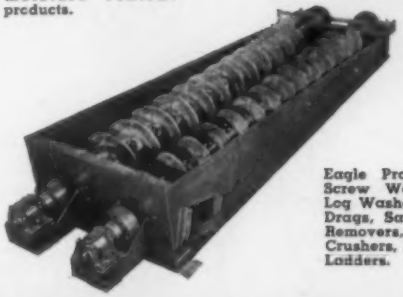

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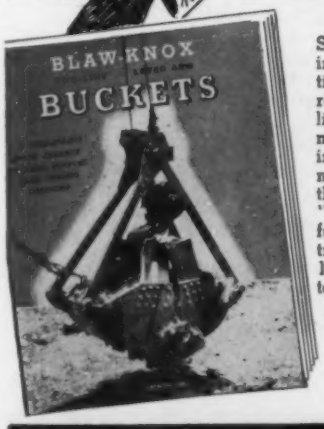

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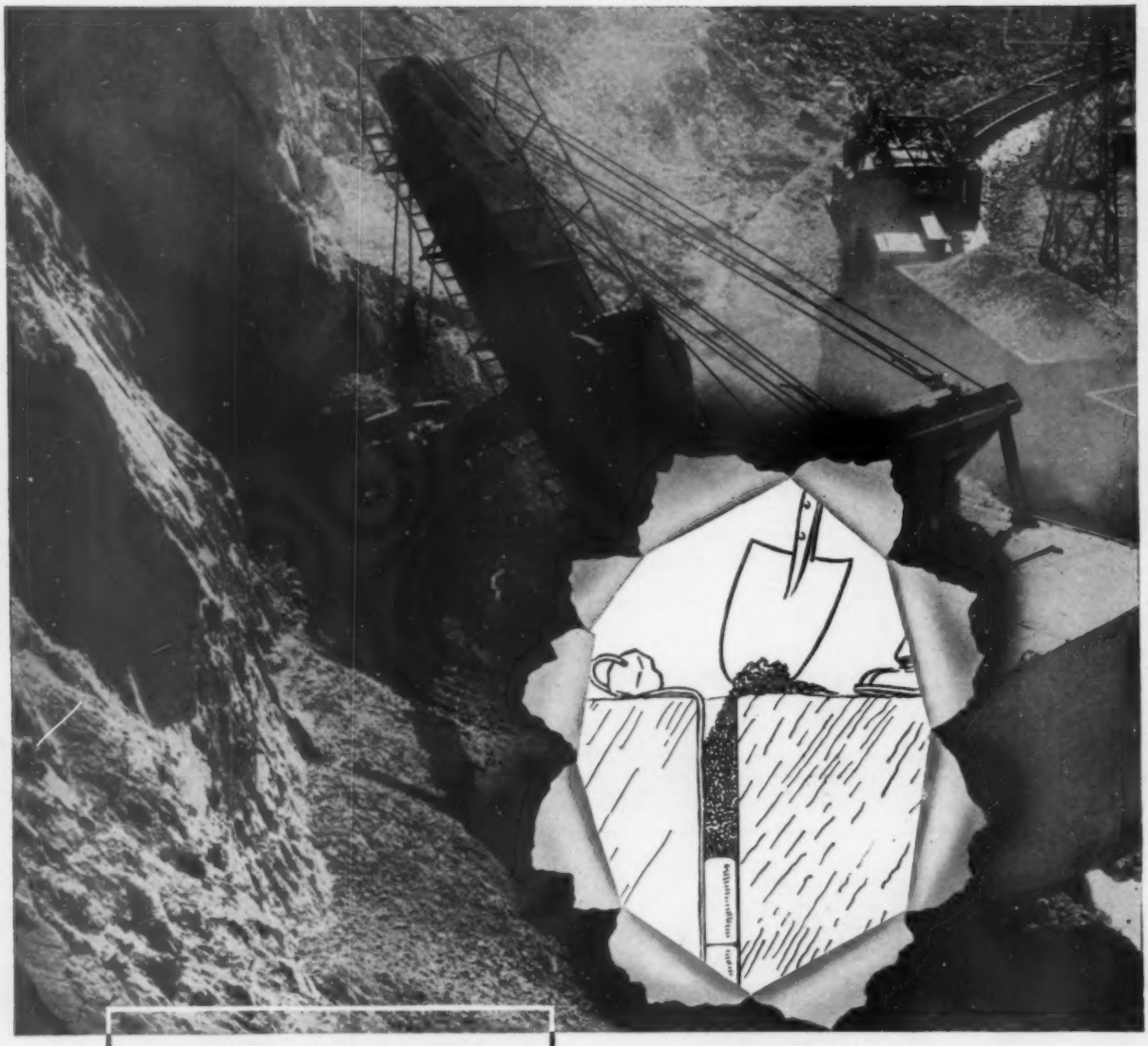

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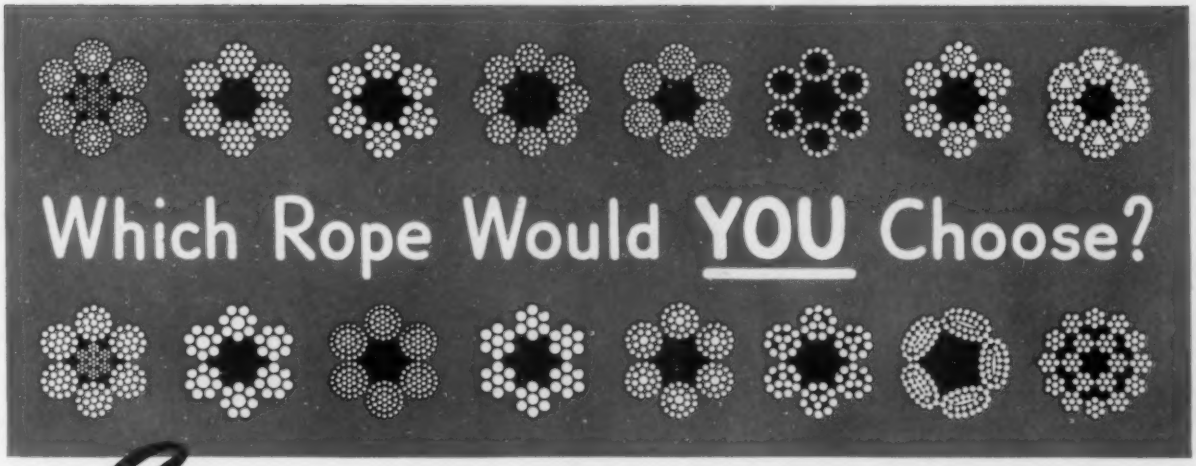

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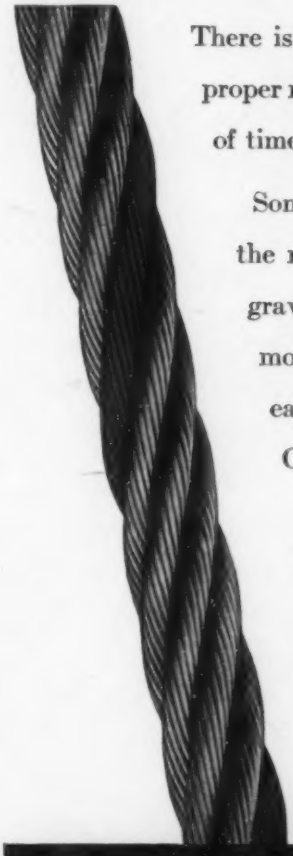

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Some machines have sheaves which impose severe bending strains on the rope. On some machines the cable drags through abrasive stone, gravel or rock. Some ropes must endure the heat of handling ladles of molten metal, while others must run at excessively high speeds. For each job there is a one best rope, not only in construction but grade. Consult an American Cable engineer.

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AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

ESSENTIAL PRODUCTS . . . AMERICAN CABLE Wire Rope, TRU-STOP Emergency Brakes, TRU-LAY Control Cables, AMERICAN Chain, WEED Tire Chains, ACCO Malleable Iron Castings, CAMPBELL Cutting Machines, FORD Hoists and Trolleys, HAZARD Wire Rope, Yacht Rigging, Aircraft Control Cables, MANLEY Auto Service Equipment, OWEN Springs, PAGE Fence, Shaped Wire, Welding Wire, READING-PRATT & CADY Valves, READING Electric Steel Castings, WRIGHT Hoists, Cranes, Presses . . . *In Business for Your Safety*

The Big Ones Come Easy

with

BUCYRUS ERIE

FIVE-YARD

120-B

1 ACCURATELY CONTROLLED POWER . . . Ample power under perfect control on each motion, hoist, swing and crowd, gives the 120-B a fast cycle. Torques, speeds and weight placement are scientifically balanced for high-speed digging. Responsive control makes it easy to maintain speed for big output throughout the shift.

2 LOW OPERATING COSTS . . . Balanced design blends operating reactions smoothly, resulting in minimum stress on machine. Every part has an ample safety factor, but modern design avoids excess weight and keeps power consumption at a minimum. With the 120-B you have minimum upkeep and minimum lost time because of time-tested design and Bucyrus-Erie quality construction.

3 EFFICIENT DIGGING ACTION . . . Long effective upper boom section, big sheaves and single-part hoist give a wide angle between line of bail pull and line of backward thrust that means maximum effective digging force at the dipper teeth. Power is applied efficiently to the business of digging throughout the 120-B.

4 BIG OPERATING RANGE . . . The 120-B has long range and high lift that make it possible to handle wide cuts efficiently. This means minimum time spent shifting tracks or shovel, and means efficient loading into modern cars or trucks. Moves, digs, and loads on steep grades; easy to get in and out of cuts.

5 FAST FULL SWING . . . Twin vertical swing units, properly balanced, give smooth action, with quick acceleration and deceleration. Full revolving, the 120-B sets oversize rocks aside easily, loads out slides quickly. With ability to load on either side, it is easy to save time by double spotting on truck haul.

6 COMPLETE MOBILITY . . . The 120-B mounting is rugged and flexible. It is a firm foundation for digging and provides for quick move-ups and fast moves from slides. The 120-B can climb stiff grades, dig in or out of a cut in either direction, go anywhere in the pit in a hurry. Ideal for mixing rock or ore; saves by doubling on loading and stripping operations.

7 EASY CONVERTIBILITY . . . The 120-B can be easily and quickly converted from shovel to dragline, or vice versa, in the field. This increases its potential usefulness, as well as giving it a higher resale value.

Bucyrus-Erie Company

SOUTH MILWAUKEE • WISCONSIN • U. S. A.